AIR CONDITIONING HEATING & REFRIGERATION NEWS
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Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Stories of the Week
Quotes of the Week
I Can't Get to Sleep Tonight
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Stories of the Week

For reasons which shall become apparent later in this column, "Dope" isn't in the mood to offer jokes of his own this week.

Rather, we recommend that you write to Precision Equipment Co., 4411F Ravenswood, Chicago 40, Illinois, and ask for a free copy of "Precision's Laugh Book."

This is a double-damask dilly-dooper collection of racy cartoons and spicy anecdotes which even "Dope" wouldn't attempt to dry-clean.

Best thing of its kind we've seen in years.

Quotes of the Week

Our great-grandfathers were not horrified by automation. After all, they did provide the ribbed washboard, the crossbuck saw, the spinning wheel, and other labor-saving devices in order to enable great-grandma to do the work of three hired girls.—*American Mecury.*

Principles, if they have not any emotional roots, will not really guide your conduct. You want in people an outgoing affection, and outgoing kindliness towards first of all your immediate circle and then your nation, and then the world. And without that feeling, people won't act right no matter what their creed.—BERTRAND RUSSELL.

I Can't Get to Sleep Tonight

This is about a little dog. A very little dog.

He was an ornery, spunky, funny, belligerent toy French poodle.

Every cat in the neighborhood was bigger than Pierre-the-Bear. But, like all the much bigger dogs around, they wanted no part of him in a scrap.

Pierre would attack on sight. If you tried to pet him, he'd growl. If you spoke pleasantly to him, he'd turn his back. But, if you pretended to ignore him for a moment, he was a lover.

All visitors were enemies—from stray dogs and squirrels

(Concluded on Page 8, Col. 1)

Heat Hits North, Record Sales Year 'Possible'--

DETROIT—It was hot and humid in the big cities of the East and Midwest last week and with the soaring temperatures rose the industry's hopes for its best sales records in three years—and perhaps even an all-time high.

A general improvement in sales had been noted up to the first of June, being pretty much in line with generally improved economic conditions, but most veterans in the industry voiced the belief that something like a "sellout" could be achieved only if a long hot spell hit the major population areas early in June.

Hot weather did hit, and with the Weather Bureau's new Discomfort Index informing the populace that they were uncomfortable, sales were beginning to boom.

How much will the improvement be? First, to consider it on the basis of now available figures:

Most major manufacturers report increases in shipments to retail outlets ranging from 10 to 40%.

The Air-Conditioning & Refrigeration Institute is reported to have put the increase in shipments of unitary air conditioners (residential and commercial) thus far this year as

(Concluded on Page 35, Col. 2)

Save the 'Discomfort Index'

Some hotelmen and convention bureau officials in certain big cities have started a movement to have the U. S. Weather Bureau offices either stop issuing the "Discomfort Index" or — what is really outlandish — to call it the "Comfort Index." In fact, we understand that the pressures exerted in Miami, Fla. have already resulted in the bureau there abandoning the D.I.

Those leading the fight against it in New York City are reported to hold the viewpoint that "the very notion that the city is uncomfortable in the summer is preposterous!" How off base in your thinking can you get? The hotelmen in particular should know better than this, because for some time they have been bragging about how many air conditioned hotel rooms there are in New York. And that's what they should talk about — rather than to issue lies about the nature of the local climate.

Some industry groups and individual manufacturers are urging all their personnel and their dealer organizations to write to the Weather Bureau and to their Congressmen, praising the Bureau on its issuance of the D.I., and asking that this service be continued. Write your local Weather Bureau and Congressman today!

How Sales Statistics Stack Up

How much better are air conditioning sales this year? The following are some facts that will provide some sort of a guide:

Total industry shipments of unitary equipment for residential and commercial applications are said to be running 40% ahead of 1958, according to official industry sources.

* * *

Individual company reports: *Carrier Corp.* shipments to dealers through May. Room air conditioners, up 18%. Central residential units, up 81%. Packaged heat pumps, up 132%. *York Div., Borg-Warner Corp.* Room air conditioner orders, up 23%. Other package equipment, up probably better than 25%. *Airtemp Div., Chrysler Corp.* Over-all air conditioner sales, up 50%. Market penetration in room coolers, up 270%, all other air conditioning, up 220%. *General Electric Co., Home Heating & Cooling Div.* Sales of G-E residential air conditioning equipment this year will probably set an all-time high, company officials predict. A three-shift operation at the Tyler, Texas plant is barely managing to keep up with dealer demand, it is reported. Belief is strong that strong sales activity will continue into fall months. *Worthington Corp.* Sizeable increases reported on air conditioning and refrigeration products across the board—from the smallest packaged units to largest engineered jobs, states A. J. Hackl, manager of the division. Increase attributed to improved market conditions, particularly in new and renovation work in commercial and industrial market, and also to expanded distribution program. *Kelvinator Div., American Motors.* May room air conditioner shipments highest in company history.

* * *

In the field: most improvement shown in Eastern and Midwest metropolitan centers. L & P Electric in New York says that by the end of June 8 week, it will have sold more air conditioners than in all of 1958, and the week might be biggest in its history. Some dealers report increases ranging from 30 to 100%. Dealer in Detroit reported selling 2 residential and commercial units a day, where in 1958 he was lucky to sell 2 a week. Shortages reported on certain models in some areas. General Electric said that it had been required to make some emergency shipments of room units to distributors in big cities .

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ASHRAE Meeting To Open June 22

NEW YORK CITY — The three-day 1959 annual meeting of the American Society of Heating, Refrigerating & Air-Conditioning Engineers, Inc. will get under way at 9 a.m. on Monday, June 22, at the Lake Placid (N. Y.) Club.

Scheduled for the meeting are eight technical sessions, three conferences, and four forums, it is indicated.

The technical sessions will be devoted to the subjects of compressors, ventilation, noise, heat transfer, sound level, general refrigeration, and air conditioning. Two sessions will be held

(Concluded on Page 23, Col. 1)

Fram Filters Said To Trap, Kill Germs

PROVIDENCE, R. I.—A complete line of air filters which is said to trap and kill germs has been introduced for medical, home, industrial, and institutional use by Fram Corp., one of the world's largest filter makers, best know in the automotive industries.

The new filters will fit all types of air conditioners, furnaces, and air circulators.

Independent laboratory tests by Hazelton Laboratories, Falls Church, Va., indicate that the filters remove 90 to 98% of all germs reaching the filter and kill more than 99% of these,

(Concluded on Page 4, Col. 1)

NAPC Plans Heating, Cooling Div.; UA Scores U. S. Attitude on Training

MIAMI BEACH, Fla. — National Association of Plumbing Contractors plans to establish a heating and cooling division, Irvin L. Rechkemmer, newly-elected president of the association, announced recently.

The delegates, however, tabled the resolution approved by the board which would have changed the association's name to "National Association of Plumbing, Heating & Air Conditioning Contractors." Also, the plumbing contractors definitely set aside any consideration of a merger with the Mechanical Contractors Association of America, although a resolution was passed continuing liaison committee work with the MCAA.

Elected at the 77th annual convention of NAPC held here recently, Rechkemmer told the press that first program efforts will be designed to acquaint the industry and the public with the fact that most contractor members do heating and cooling work in addition to plumbing.

Promotion and public relations activities in this field will

(Concluded on Back Page, Col. 1)

Charleston May Limit Placement of Remote Air-Cooled Units

CHARLESTON, W. Va.—An ordinance restricting the location of remote air-cooled condensing units in residential air conditioning is expected to be voted on by the Charleston city council today (June 15).

The proposed ordinance would prohibit the installation of a detached residential air conditioner producing disturbing or

(Concluded on Page 4, Col. 5)

Suellau, French Named Exec. Vice Presidents By General Chemical

NEW YORK CITY—Appointments of Vincent W. Suellau and Frank J. French as executive vice presidents of General Chemical Div., Allied Chemical Corp., were announced by I. H. Fooshee, president of the division.

A member of the Allied Chemical organization for 38 years, Suellau has been vice president in charge of sales for General Chemical Div. since 1954.

French has been vice president in charge of the division's production, mining, purchasing, and industrial service activities for the past year.

He was previously director of purchases for the division from 1952 to 1958.

Vacation Schedule

2 Firms Plan Early Closings

DETROIT — It's vacation time again! And many plants in our industry will close their doors so all employes can frolic at the same time.

Starting next week, the NEWS, as in past years, will publish a schedule of such plant shutdown periods, giving dates when plant and/or office will be closed and what provisions will be made for shipments during that period.

Information will be published well in advance so as to be of service to salesmen planning their calls and to customers scheduling orders.

Questionnaires seeking this information have already been sent to manufacturers. However, any manufacturer who fails to receive one and wishes to have his vacation or inventory shutdown schedule listed, is invited to send the data to us as soon as possible.

Next week's issue will list those companies with vacation or inventory shutdowns starting prior to July 3.

However, two firms are geting off to early starts. They are **Armstrong Furnace Co.** of Columbus, Ohio whose plant will shut down for two weeks beginning June 21 and **Keco Industries**, whose Cincinnati plant will close for two weeks beginning June 24. In both cases special crews will remain on duty to handle emergency shipments.

New Construction May Hit Record High Of $53 Billion--Architectural Forum

NEW YORK CITY — New construction in 1959 outdistancing optimistic forecasts, is headed for a record total of $53 billion, the building magazine *Architectural Forum* said recently.

The pace for the first four months of the year is so fast that *Forum* has added another billion dollars to its boom prediction made in late 1958.

The strength of this building surge is concentrated in two major areas—private residential building (up 29% in the first four months) and public building (up 17%), the magazine reported.

Housing starts in the same period were the highest on record (422,200), and the seasonally adjusted rate was 4,000 units higher than the previous four-month peak of 1,362,000 in 1955.

Public construction, sparked by highway construction and military building, is 17% higher in the first four months of this year than in record-setting 1958, the report said.

Some private construction, *Forum* said, is not doing so well. Total private non-residential building is 5% under the first four months of 1958, due largely to a 33% drop in industrial construction. While construction of new stores, restaurants, and garages has gone up, office buildings, hospitals, and other institutional buildings, and telephone facilities have shown a decline.

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to simplify installation!

More and more manufacturers are using the Penn Series 210 pressure control for packaged residential and commercial air conditioning to make the installer's job easier.

First, the 210 is "tailor-made-to-the-unit" with pressure settings made and sealed at the factory to prevent customer tampering, cut installation time and minimize call-backs. Second, it's ***compact*** and ideally suited for panel mounting or where space is limited. Third, its new, patented power element assures ***accurate*** repeat performance. Fourth, the contact unit, in either SPST or SPDT action, is totally enclosed. And, there are many other advantages . . . write to Penn for the complete story!

It's best to use Penn!

View of Series 210 for water or air cooled air conditioning systems.

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specifically designed for air conditioning

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AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

Carrier Order Backlog Increases for Second Quarter by $3,581,000

SYRACUSE, N. Y. — Second-quarter net sales and earnings of Carrier Corp. were lower than in the corresponding period of 1958. However, the order backlog increased by $3,581,000 during the quarter as compared with a decrease of $3,590,000 a year ago, the company reported.

For the three months ended April 30, the figures were: Orders booked, $72,167,000; net sales, $68,586,000; net profit, $2,320,000 or $1.03 per share of common stock. And the backlog of unfilled orders amounted to $101,406,000.

Comparable data for the second quarter of 1958 were: Orders booked, $69,912,000; net sales, $73,501,000; net profit, $2,917,000 or $1.32 per common share. The order backlog at the end of April a year ago was $113,866,000.

The figures for the first six months of the present fiscal year were: Orders booked, $122,215,000; net sales, $118,066,000; net profit, $2,716,000 or $1.12 per share of common stock.

The comparable 1958 results were: Orders booked, $132,184,000; net sales, $124,312,000; net profit, $3,329,000 or $1.42 per common share.

Carrier had no bank loans outstanding at the end of April and current assets were 4.44 times current liabilities, it was stated. Working capital was in excess of $105,000,000.

Commenting on the report, Cloud Wampler, chairman of the board, said: "The decrease in volume and earnings is attributable largely to lower shipments of Carrier products generally classified as capital goods.

"With respect to our divisions concerned principally with consumers' durables, their net sales, profits, and orders booked were larger than in the corresponding periods of fiscal 1958.

"In spite of a recent pickup in orders booked, especially for heavy equipment during the month of April, it is likely that Carrier will not achieve its budgeted objective, which was a larger net profit in fiscal 1959 than last year."

QUIET POWER FOR THE AIR MOVING INDUSTRY

Here are just a few of the many reasons why Delco Shaded-Pole and Permanent-Split Capacitor motors make a good product *better!* Read them over and think of the sales advantage they would give *your* product. Then get the whole story—send for a free catalog "Quiet Power for the Air Moving Industry"—it gives applications and data on Delco's complete line of motors for air moving equipment. ● SMOOTH PERFORMANCE—Cast aluminum rotor and fan blade assembly is dynamically and statically balanced. ● LIGHT WEIGHT—Die cast aluminum end frames offer minimum weight, maximum strength. ● PRECISION ALIGNMENT—Steel-backed Babbitt bearings for rigid operation, long life. ● QUIET OPERATION—"Bearingized" journals on straight-through ground shafts, along with neoprene thrust washers, combine to make a quiet motor. ● LESS MAINTENANCE—Life tests prove *one* lubrication lasts more than 20,000 hours of operation (equivalent to 5 years' use). ● VERSATILITY—Choice of enclosed or ventilated main frame and end frame offers flexibility in product design. ● ALL-ANGLE MOUNTING—Advanced design system lubricates motor in any position. ● MOISTURE RESISTANCE—Stators are insulated to resist high moisture conditions and maintain thermal stability under heat or overload. ● PRECISION ASSEMBLED—All components precision-fitted to produce a dependable, balanced motor good for years of quiet, efficient service.

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DELCO MOTORS

Delco Products
Division of General Motors, Dayton, Ohio

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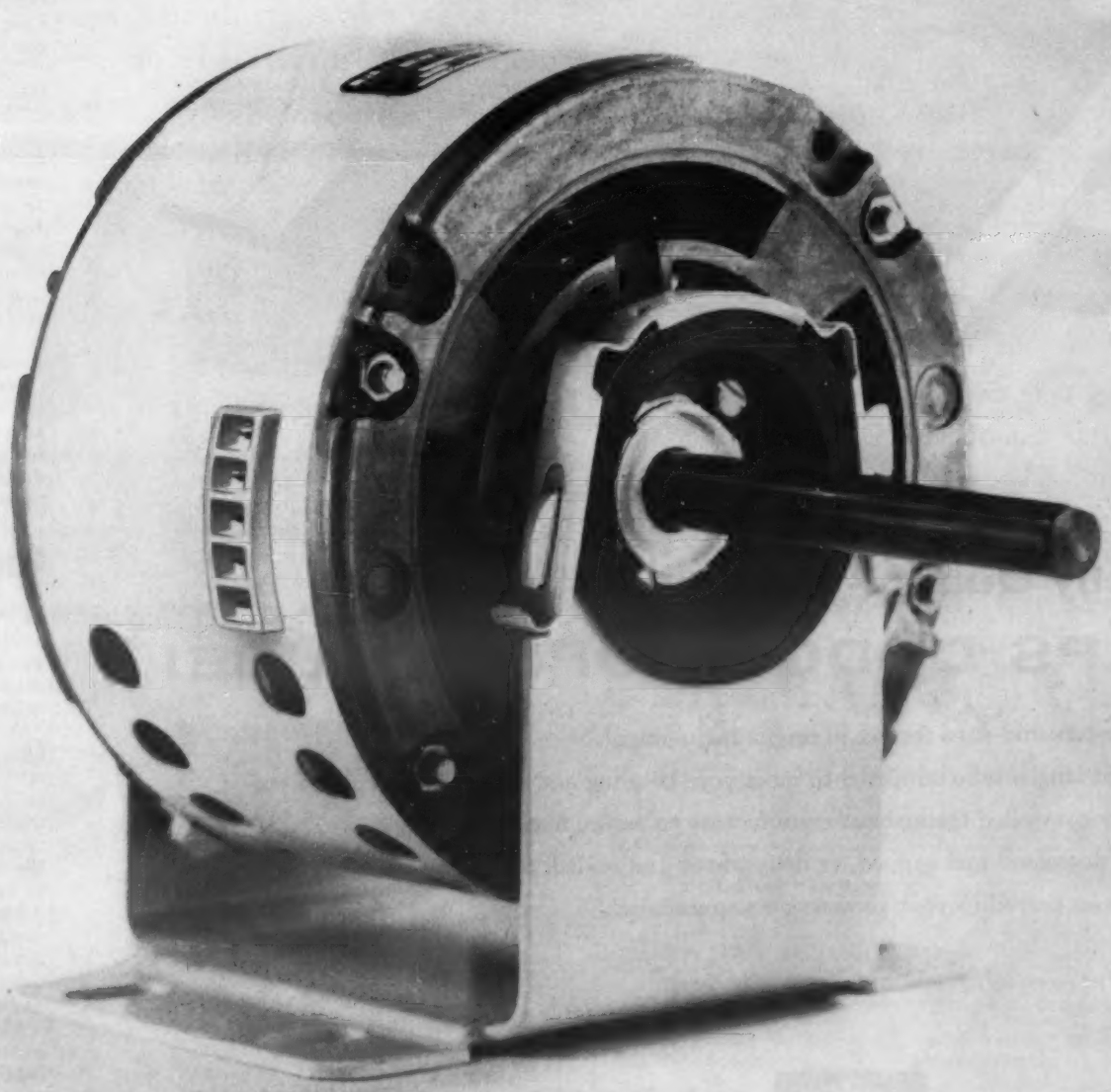
- INDUSTRIAL MOTORS
- HERMETIC MOTORS AND CONTROLS
- GENERATORS



Fram Germicidal Filter Line--

(Concluded from Page 1, Col. 3)

Fram said. The germicidal efficiency is permanent, the manufacturer states.

The germicidal agent used in the filters is called "Permachem," and is being adapted for use in many other products. Fram has exclusive licenses for its use in air filtration.

Fram's filters also pioneer a new type of filtering media. The new filtering media consists of dry synthetic fibers which are bonded together to form a "depth-maze" of dirt traps. The Permachem - treated cellulose acetate material is odorless, white, non-splintering, and non-irritating.

Mounted in specially stitched frames, the filters are said to have longer life and more "dirt holding capacity" than currently used materials and are unaffected by humid operating conditions.

Fram will sell its new filters through 13 channels of distribution and 21 types of retail outlets so that all home, industrial, and commercial markets can be reached. Distributorships are still available, the company said.

A total of 300 different models and sizes has been produced for all air conditioners and warm air furnaces. Room air recirculators to hold the new Fram filters are being developed by several companies, including Fram.

"Do-it-yourself" filters will be sold in many retail outlets. The pads are large enough to be cut to fit any window unit.

In planning to enter the heating and cooling filter market, Fram evaluated filtering media for more than 10 years. Fram pushed research on more than 400 materials before chosing dry cellulose acetate fiber.

ABOVE: Housewife cuts "Do-It-Yourself" Fram filter to fit home air conditioner. These pads are large enough to fit any room air conditioner, according to the manufacturer.

BELOW: Serviceman installs one of many commercial models of Fram germicidal air filters in an air conditioner. A total of 300 different models and sizes of the filter has been produced for air conditioners, furnaces, and room air circulators.

Steven B. Wilson, board chairman of Fram, asserted, "The new filters will create drastic changes in future air moving equipment and building ventilating systems as new ways to use the germ-killing feature are found.

"There are many continuing test programs being conducted to more fully measure the effect of the filters on improving public health," Wilson continued.

"For example, we've made plans to furnish filters to an entire city school system which has hot air heating furnaces. We will measure the effect of the filters on attendance records over a year's time."

'Out-of-the-World' Air Conditioner Patent Issued

WASHINGTON, D. C.—Some details on an "out-of-the-world" air conditioning system are contained in an issue of the U. S. Patent Office's *Official Gazette*.

The publication reports that a patent (2,873,582) has been granted Frederick H. Green, Palos Verdes Estates, Calif., assignor to The Garrett Corp. of Los Angeles, for an air conditioning system for space ships. (See regular patent section of the NEWS on page 36.)

This description of the system is given:

"1. An air conditioning system for an enclosed space comprising: a source of liquid oxygen; a vortex tube having an inlet orifice, and suction and discharge openings; circulating means for conducting said liquid oxygen from said source over the outer surface of said vortex tube while maintaining said liquid oxygen in heat exchange relationship with said surface; conduit means connected to said circulating means and said inlet orifice and means for connecting said suction and discharge openings to said enclosure."

Charleston Bill--

(Concluded from Page 1, Col. 5)

unusual noises audible to a normal person 50 ft. distant or to a person upon a porch or within a room in an adjacent dwelling.

It would also require that detached residential air conditioners be installed at the point most distant from adjacent dwellings and that the exhaust from such units be directed at the owners dwelling rather than at any other dwelling.

The city building inspector would be given the task of drawing up reasonable regulations to implement the ordinance.

The ordinance would not apply to portable or window air conditioners.

Irving Abrahams of Major Appliance Center here told the NEWS that the Charleston Warm Air Heating Contractors Association is fighting the proposal.

The contractors want it modified by more practical rules to solve the noise problem.

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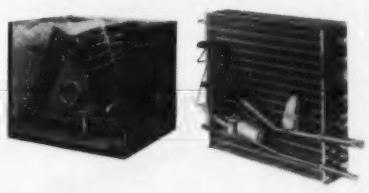
YOU CAN PLAY BOTH SIDES WITH JUST 5 NEW GENERAL ELECTRIC AIR CONDITIONING UNITS

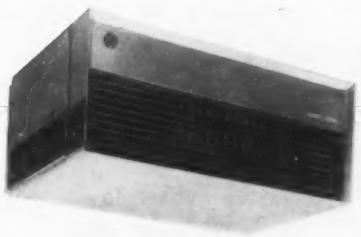
Never before has a manufacturer of air conditioning equipment made it so easy for dealers to do business.

Just 5 great General Electric units, installed singly, or in multiple, permit you to meet the air conditioning requirements of all types of homes, as well as stores, offices, motels, restaurants, small plants—all types of establishments that account for over 70% of all commercial and industrial air conditioning.

Remote condensing units—factory-sealed — air-cooled — weather-proofed. May be placed on roof, in attic or cellar, on outside slab or shelf. Use with G-E cooling coils or air handling units. Five models—2 through 5 tons.



Cooling coils to convert warm-air furnaces into year 'round whole-house air conditioning. "A" type for low headroom, upflow or downflow. Flat type for upflow, downflow, horizontal. Five sizes: 24,000 BTUH to 60,000 BTUH.



Air handling unit Includes blower, evaporator and filter. May be installed with ductwork or without ductwork using optional diffuser shown. Used with remotely installed G-E air-cooled condensing unit. 2 through 5 tons.

Packaged cooling unit — compact — air-cooled — self-contained. For use with or without duct. Decorative diffuser-filter frame for commercial in-space installation. Install in attic, crawl space, cellar, hallway—on roof, slab—through transom, wall. 2, 2½ and 3 ton sizes.

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Consider These Advantages to You:

- Inventory storage cut to the bone.
- You're in both businesses, residential plus commercial—industrial, with both feet.
- Same installation and service men can handle both types of jobs.
- Same salesmen can prospect in both businesses.
- More "over-the-transom" business comes to you when you become General Electric Air Conditioning headquarters for all types of jobs.
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Carrier To Study Use of Thermoelectric Air Conditioning for Use on Ships

SYRACUSE, N. Y. — Design studies to test the feasibility of thermoelectric heating and cooling in shipboard air conditioning will be undertaken by Carrier Corp. under a contract from the U. S. Navy, it was announced recently.

The 18-month program contemplates preliminary design and analysis. Successful completion will lead to large-scale development of thermoelectric heat pumps, containing no moving parts, according to Dr. J. F. Downie Smith, research and development vice president of Carrier.

Thermoelectric heat pumps produce cooling and heating directly from the action of an electric current on certain combinations of materials. Thus they eliminate noise of refrigerating compressors or pumps used in present day air conditioning, Dr. Smith said.

Similar devices can be used to generate electricity directly from heat, also without moving parts. The importance of such vibration-free equipment to the Navy is underscored by another recent contract for Carrier to develop a 5,000-watt thermoelectric generator.

Thermoelectric air conditioning is based on the principle that applying an electric current to a circuit in which dissimilar materials are joined causes one junction to become hot while the other becomes cold. Thus cooling can be produced at one point and heating at a second.

May Refrigerator Sales by Gibson Top '58 by 278%

GREENVILLE, Mich. — Gibson Refrigerator Co.'s May refrigerator sales showed a 278% increase over the same month in 1958, according to A. J. Grewe, refrigerator sales manager.

Refrigerator sales for the first five months of 1959 increased 113%, and sales for the first eight months of the model year are 101% ahead of the like period in 1958, stated W. C. Conley, vice president in charge of Gibson sales.

Continued consumer acceptance of the Gibson two-door refrigerator-freezer combination and the freezerless "Market Master" is credited for a large part of the gains. Over 40% of production is in the two-door.

Virginia Smelting Names C. N. Yerby

WEST NORFOLK, Va. — R. H. Israel, sales manager of the Refrigeration Dept., Virginia Smelting Co., announced the promotion of C. N. Yerby to regional sales supervisor.

C. N. Yerby

His new activities will embrace a region of four sales territories in the southwest and southeast For the past two years, Yerby has been credit manager under which capacity he acted as assistant secretary-treasurer of the company.

He will maintain headquarters and will work out of the Refrigeration Sales Dept. offices at West Norfolk.

Texas Bans Misleading Use of 'Wholesaler'

FORT WORTH, Texas—A bill banning false advertising by wholesalers and misrepresentation as to who is a wholesaler was signed into law recently by Gov. Price Daniel.

Effective date is Aug. 10, 1959. Violators will be subject to a fine of $100 to $500.

Advertising under the title of wholesale business will be permitted only when the actual sale is made at a wholesale price to a dealer for resale.

According to sponsors of the legislation, some business diversion practices mislead consumers into thinking they are buying merchandise at wholesale prices substantially below regular retail prices when in fact they are not.

Marsh Elects Willach Engineering Vice Pres.

SKOKIE, Ill. — Election of Bernhard Willach as vice president for engineering has been announced by Marsh Instrument Co.

B. Willach

Willach, who received his engineering degree from Cologne university, has devoted a total of 33 years to the design of pressure gauges and similar instruments.

During the past 17 years as chief engineer of Marsh Instrument Co., he has made important contributions to the development of Marsh pressure gauges, dial thermometers, refrigeration instruments, heating specialties, and other Marsh products it was noted.

Tulane Grads Get Temporary Cooling For Ceremonies

NEW ORLEANS — Graduating ceremonies at Tulane university were held in air conditioned comfort, thanks to Ready Cool, Inc., of New Orleans.

The firm employed 10 units to furnish temporary air conditioning to the school gymnasium. The units kept the temperature at 74° and 50% relative humidity, said J. W. Joachim, Jr., firm president.

The portable units were placed on the outside of the building and the cool air piped in through plastic ducts.

Dayton Rubber To Open Cincinnati Office

DAYTON — Dayton Rubber Co. will establish a new warehouse and regional sales office in Cincinnati, company officials disclosed. The building currently under construction is to be completed by July 1. It is located at 7726 Reinhold Drive.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.
Only 25¢ each.

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...that's the word for your wholesaler—

the man who supplies you with air conditioning and refrigeration equipment. He knows what you need...stocks it... or can get it in double quick time. And you can depend on him for the most reliable, highest quality products in the field...like General Controls. Make his place of business your headquarters for equipment...you'll be way ahead.

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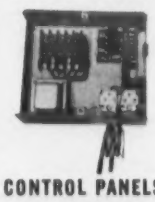

CONTROL PANELS

SOLENOID VALVES

EXPANSION VALVES

AIR CONDITIONING AND REFRIGERATION CONTROLS

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Carrier

AUTOMATIC ICE MACHINE

Certified Capacity

This certifies that this Carrier Model.....Automatic..... installed at:

.....(NAME OF PLACE)

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for.....(OWNER OR OPERATOR)

will produce or deliver.....pounds of ice per 24 hours EVEN WHEN OUTSIDE AIR TEMPERATURE IS AS HIGH AS.....°F., AND INLET WATER TEMPERATURE IS AS HIGH AS.....°F. When air and water temperatures are lower, equipment installed is certified to produce or deliver proportionately greater quantities of ice

This certificate is based on the conditions that the machine is properly installed, and regularly and properly cleaned and serviced by an authorized Carrier dealer

CARRIER ICEMAKER DEALER ..... CITY AND STATE .....

ADDRESS ..... TELEPHONE .....

DATE..... SIGNED .....

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ONLY CARRIER OFFERS ICEMAKERS WITH CERTIFIED CAPACITY

There are 16 Carrier Icemakers to give your prospects exactly the kind of ice they need. You can stand behind the amount of ice they'll expect, too, because every Carrier Icemaker comes with capacity certified in writing.

There are no "up to" qualifications. There are no "average" production figures. Capacity is determined according to air and water temperatures where customers are.

You can show how prospects save as much as 80% on ice with a Carrier Icemaker. The exact figures—and a lot of other trustworthy facts—put Carrier Icemaking Equipment dealers at the head of the field. If you'd like complete data, write Carrier Corporation, Syracuse 1, New York.

Carrier **AIR CONDITIONING · REFRIGERATION**

Inside Dope

By GEORGE F. TAUBENECK

(Concluded from Page 1, Col. 1)

which wandered into the front yard—to cocktail party guests and the laundryman.

Outside our home area, however, this very little dog was Mr. Wiggly-waggly Personality Himself. He captivated everybody—especially little girls of all ages. He was cuddly, cute, and a hambone clown.

In this age of dull conformity, Pierre-the-Bear was an individualist. Whatever other dogs did he performed differently. And all the other dogs for blocks around loved him—for his individualism, apparently.

Whenever we went out for a walk he soon was joined by Fritz, the majestic collie; Tippie, a fawning mongrel; two Beaus (both enormous gallumphing standard poodles), plus assorted boxers, beagles, spaniels—all of whom adored our tiny beast.

Like the 130-pound fellow who challenges all the heavyweights in a bar to a fight, Pierre enjoyed automatic protection from those of his own kind. They treasured him for being what they wished they were.

In dogdom's fraternity he was a political leader.

He died in my arms. Dashing out to chase away an interloper, he was clipped at the curb by a speeding, careening auto which veered suddenly while passing another car on the right.

Gentlemen of the jury, scorn me as a sentimentalist, if you will. Say I'm "corny," and an old-fashioned slob.

Yet, here I am at 3:45 a.m., feeling emotionally spent because I can't quite believe he won't be here tomorrow morning—nestling up to my pillow until he nudges me into a stimulating morning walk.

Pierre-the-Bear was our nickname for a rather rare canine. His AKC cognomen was a complicated dilly. So you can see, Mr. Practical Comptroller, that he represented a substantial investment lost and gone.

But that isn't the reason why this writer is feeling wretched.

The murdered little dog's intrinsic worth—as a rugged individualist, indefatigable comedian, lover-pie, home protector, and admired leader of his animal fraternity—was incalculable.

If there's a Dogdom Heaven—and surely there must be—he's up there right now, leading the band and the parade, and aggressively intimidating all the stray intruders.

I can't go to sleep tonight . . . and probably I'll see him in the daytime for weeks and months to come. A fellow gets lonely for his dog who isn't there, and never will be again.

Navy to the Rescue!

A new technique for storing red blood cells under refrigeration to keep them "alive" for two years and longer has been discovered by U.S. Navy medical officers.

Previously, red blood cells were deemed to have a usable life (for transfusions) of 20 days to a month, at most. Ice crystals which formed in stored blood cells normally had destroyed them over longer periods.

However, U.S. Navy medicos recently have performed successful transfusions with blood cells kept under refrigeration 24 months.

Thanks to this new technique, red cells are separated from other elements in the blood by a fractionator, which operates somewhat like a cream separator.

These cells then are mixed with glycerine and stored in a freezer. The glycerine serves as an anti-freeze to prevent formation of cell-destroying ice crystals.

Remember, though—this technique requires a freezer.

Again: Refrigeration and the U.S.A. Navy come to the rescue!

Another Rescuscitator—Air Engineering

Today we live in an atmospheric sewer into which criminally we dump some of the deadliest garbage known to man: carbon monoxide, sulfur dioxide, and lethal hydrocarbons such as benzypyrine, to pinpoint only a few culprits.

Some of this stuff is so poisonous that if we used it on an enemy in wartime we would be accused of barbarous practices in violation of the Geneva Convention. Yet, we inhale it ourselves 24 hours every day.

Factories, homes, incinerators, smelters, refineries, and even our own bodies make their contribution toward mass suicide.

W. L. Faith of the Air Pollution Foundation states: "Over 50% of the total pollution going into the air each day comes from the automobile."

That could be. However, the multiplex problem is not quite that simple.

Subscribe to AIR ENGINEERING, and you'll discover plenty of answers you've never considered before.

Poisoned air is shortening your life!

Our Roughest Problem

We hear on every hand that it is the duty of the national government to provide for the welfare of the people. Greatest benefit any nation can provide for its people, however, is a stable currency. . . .

That would prevent further inflationary theft from those with fixed or lagging incomes.

It would benefit those who depend on Social Security and/or pensions.

It would protect the value of our savings accounts and insurance policies.

It would encourage thrift and the formation of investment capital.

It would enable business to expand more boldly and thus provide more jobs for the unemployed.

A stable dollar would protect "the little people"—those who are supposed to be helped the most by so-called Federal aid programs.

Everyone professes to be against inflation. Likewise, everyone favors economy in government, but only so long as it *doesn't affect them.*

Businessmen must get into politics if we are to preserve our free market system and avoid further inflation.

If we do not become politically active, others are going to legislate and spend our way into State socialism—and businessmen won't have any business left that they can call their own.

Let's all band together to fight inflation with all the public relations tools at our command!

It's new, it's the FINEST

J-E **TYPE 701 three-way SOLENOID VALVE**

for accurate flow control of hot or chilled water with fan coil room units

● Low in Cost ● Easy to Select ● Easy to Install

Now, with the J-E Type 701 3-way Solenoid Valve you can easily solve the problem of water control for fan coil units, using forced circulation chilled or hot water for individual room air conditioning. In response to thermostat demands the valve diverts water either through the heat exchange coil or to by-pass the coil when temperature requirements are met. It provides accurate temperature control, in place of run-away heating and cooling.

Capacity range is from ½ gpm to 10 gpm with a maximum operating pressure differential of 25 psi (with 200 psi static). It's easy to select and low in first cost. New, separable solder flange makes installation easy.

Using the time proven principles of pilot operation and diaphragm amplification, the Type-701 provides maximum flow at low pressure differentials, eliminates fluid "hammer" and electrical hum and provides years of trouble-free service. Famous Jackes-Evans design features of no close tolerances, few moving parts, long-life coils and corrosion resistant materials assure true customer satisfaction.

For complete information, call your wholesaler or write direct today.

J-E *controls division*
JACKES-EVANS MANUFACTURING COMPANY
4427 Geraldine Avenue • St. Louis 15, Missouri

Climate by Chrysler

...your customers would pay up to $364 just to get the standard "extras" alone

If your customers had to buy all the valuable extra features that are standard only on Chrysler packaged air conditioners, they'd have to pay up to $364! Here's what they'd get:

1. **Light load capacity control.** Brings down humidity rapidly and economically when outside temperatures are moderate.
2. **Electro-magnetic safety controls.** Increase the service life of their air conditioning equipment. Protects their investment.
3. **Mild-weather control.** Keeps equipment running on mild days when others fail . . . an added comfort bonus.
4. **Quick-response expansion valve.** Provides fast cooling, brings steady supply of conditioned air in only 30 seconds. Cuts operating costs and wear on parts.
5. **Oil rectifier.** Cleans and purifies the system's lubricant; protects against condensation; prevents service breakdowns.

With Climate by Chrysler, you offer customers more than just coolness for their air conditioning investment. Exclusive features, lower installation and operating costs are but a few of the sales advantages that help you sell more . . . and profit more. Get the full story from your local Chrysler Distributor. Or write: Airtemp Division, Chrysler Corporation, Dept. H-69, Dayton 1, Ohio. Canadian Distributor: Therm-O-Rite Products, Ltd., Toronto, Ontario.

CHRYSLER AIRTEMP

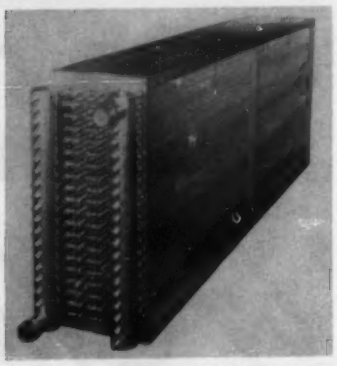
FIRST WITH THE FINEST IN AIR CONDITIONING

Halstead & Mitchell Sells Cleanable Chilled Water Cooling Coils To GSA

ZELIENOPLE, Pa.—A major sale of cleanable water coils to the General Services Administration of the U. S. Government highlights the introduction of a new line of chilled water-cooling coils by Halstead & Mitchell here, the company announced.

"Halstead & Mitchell, who pioneered in the cleanability of water-cooled condensers, has adapted its engineering experience to adding cleanability to these units," the company said.

"Advantages of cleanable chilled water-cooling coils under bad water conditions are obvious. A build-up of sediments is avoided, making them particularly suitable for central station or zone air conditioning systems in many areas.



HALSTEAD & MITCHELL'S new cleanable water cooling coil.

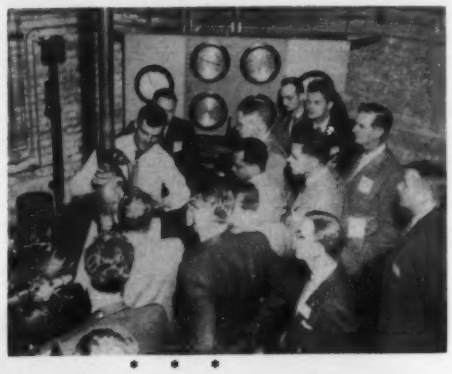
"Like all finned coils manufactured by Halstead & Mitchell, these feature the exclusive 'Turbo-Flo' fin to provide an extra measure of heat transfer capacity. The embossed, streamline pattern increases fin surface and results in better air wash. This steps up heat transfer by as much as 15%.

"Secondary and primary surfaces are properly balanced for best efficiency and low air friction. Seamless copper tubing, ⅝ in. o.d., is spaced on 1½-in. centers."

Standard coils use in-line tubes, but staggered tubes can be furnished on special order at no extra charge, it was stated. Turbu-Flo aluminum fins are permanently bonded to the tubes by mechanical expansion of the tubes.

Galvanized casings are furnished as standard. Flanges and mounting holes are provided to simplify coil installation.

Coils are available with finned surface heights ranging from 12 in. to 36 in., in 3-in. multiples. Lengths range from 24 in. to 120 in., in 6-in. multiples.



FRANK RAUFEISEN, a member of the Bell & Gossett engineering staff, explains to members of the American Society of Refrigerating Engineers the testing facilities for refrigerant compressors in the Bell & Gossett Co. research laboratories.

286 Attend Last Chicago ASRE Meeting, Tour Bell & Gossett Plant

CHICAGO—Two hundred and eighty-six members and guests of the Chicago section of the American Society of Refrigerating Engineers attended their last official meeting under the ASRE name on May 14 at the Bell & Gossett Co. Morton Grove, Ill. plant.

Also on hand for the meeting were members of the American Society of Heating & Air-Conditioning Engineers who will merge with the ASRE in September to form a single organization to be known as the American Society of Heating, Refrigerating & Air Conditioning Engineers (ASHRAE).

Highlighting the final meeting was a tour of the vast Bell & Gossett plant where members inspected the latest refrigeration and air conditioning products being manufactured by the company.

These included compressors, package liquid coolers, water chillers, pumps, heat exchangers, and electric motors.

All manufacturing phases were covered in the field trip including engineering, machining, assembly, and testing. Visitors also toured the Bell & Gossett copper shop, welding and research departments, and a special sealed room where compressors are assembled under dust-free, humidity-controlled conditions.

In addition, Bell & Gossett was host for cocktails and dinner prior to the plant tour.

Guests at the event represented top management and engineers in the heating and air conditioning industry from throughout the midwestern states area.

Bell & Gossett executives who attended the meeting included R. E. Moore, president; Clarence E. Pullum, executive vice president; William A. Boone, vice president; and Morry Hofmeister, manager of the air conditioning and refrigeration division.

Cci Brief Gives Tips On Testing Brine

WASHINGTON, D. C.—Brief RB-1 "Maintenance of Calcium Chloride Brine," gives suggestions for accurately testing brine strength and tips for strengthening brine, according to the Calcium Chloride Institute.

It includes data on tests for ammonia leakage, alkalinity or acidity of brine, corrosion inhibitors, and methods for correcting acidity and alkalinity. A chart indicates proper amounts of calcium chloride needed in preparing or strengthening brine.

For a free copy of Brief RB-1, write to Calcium Chloride Institute, 909 Ring Building, Washington 6, D. C.

IN TUBING,
Nothing Beats Copper!
IN COPPER TUBING,
Nothing Beats READING!

For COPPER WATER TUBE
Specify READING "LEKTRONEAL"®

For COPPER REFRIGERATION TUBE
Specify READING "LEKTROSEAL"®
Soft tempered easy forming—dehydrated
50 ft. coil in protective carton.
Crimped ends seal out moisture & dirt

Also Specify READING
for
• COMMERCIAL COPPER TUBE
• RED BRASS & COPPER PIPE
• THREADLESS COPPER PIPE

For FINNED COPPER TUBE
Specify READI-FIN®

A line of heat transfer tubing made by Readi-Fin Mfg. Co., Inc. (a subsidiary of Reading Tube Corp., at Reading, Pa.). The extended surface is extruded from the tube wall, thus eliminating the possibility of fin failures resulting from thermal shock, corrosion and erosion. This "one-piece" (integral) construction provides maximum heat transfer efficiency, ruggedness, easy fabrication and freedom from fouling. It's available in Water Tube types with finned or plain ends and in Condenser Tube types with finned, plain or stripped ends.

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READI-FIN TYPE S/T

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Specify MACKENZIE WALTON
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• Famous for Accurate and Fine Finish Tubing
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DENVER, COLO. 2845 Walnut St.
CLEVELAND, OHIO 4615 Perkins Ave.
HOUSTON, TEXAS 1121 Rothwell St.
DALLAS, TEXAS—9000 Sovereign Row, Brook Hollow Industrial District

R. W. Tribble

D. T. Donovan

3 New Staff Members Named For G-E Cooling

TYLER, Texas—C. B. Ramsdell, marketing manager of central air conditioners, General Electric Air Conditioning Dept., announced three new appointments in his headquarters staff here.

W. G. Burk

R. W. Tribble was named manager of project and builder sales. Tribble, long associated with the department's sales force, and recently specialist-sales planning, will administer all builder sales, and also supervise the bidding of heating and cooling equipment for use in military housing projects.

David T. Donovan, formerly an application engineer with the department, was appointed specialist-sales planning. His new duties include administering the department's sales incentive plans, and formulating and implementing future sales plans.

William G. Burk, of the advertising section, has been named specialist-publicity. His duties include editing the department's dealer-distributor magazine.

Supreme Court Ruling on Conspiracy to Boycott Leads to Another Suit

SAN FRANCISCO — Following a U. S. Supreme Court ruling that a merchant need not show the public is injured to sue under the anti-trust laws, an appliance firm here is preparing to sue again another retailer and 10 manufacturers for alleged conspiracy to boycott and discriminate against it.

Klor's Inc. had previously sued Broadway-Hale Stores, Inc. and 10 appliance and television manufacturers for treble damages on the ground that it was the target of an illegal conspiracy.

U. S. District Court ruled against Klor's because it could not show that the public was injured. The dispute between Klor's and Broadway-Hale had little effect on the opportunity of the consumer to purchase the goods in question, the court said.

The U. S. Court of Appeals upheld dismissal of the case. But the Supreme Court ordered the District Court to reinstate the case. It agreed with the assumption, under the Sherman Anti-Trust Act, that the public suffers when an individual businessman is the target of an illegal conspiracy.

Klor's attorneys expect to be ready for trial by Oct. 15.

Medical Research Finds

Treating Air with Ultraviolet Light Cuts Spread of Asiatic Flu Germs

CHICAGO—Treatment of air with ultraviolet light apparently can help in the prevention of the spread of Asiatic flu germs, the National Tuberculosis Association heard at its recent annual convention here.

The association also told of successful experiments with "air-borne" vaccination for tuberculosis, and the possibility of extending this process for other types of vaccination.

Meeting with the Tuberculosis Association was the American Trudeau Society, its medical section, which has been extending its research into lung and throat infections other than TB.

Ultraviolet light used to treat air in rooms apparently helped prevent spread of Asiatic flu in the Veterans Administration Hospital at Livermore, Calif., according to a study made by Dr. Ross L. McLean.

A group tested by Dr. McLean got as high as 67% reduction in the number of Asiatic flu cases at the time of the 1957 epidemic, in rooms treated with ultraviolet light.

What Dr. McLean and his associates believe is that ultraviolet rays, known to be destructive to certain bacteria and viruses, in some manner blocked the airborne transmission of the Asiatic flu virus.

A new way to be vaccinated—simply by breathing vaccine-containing air—was forecast in the report of a study made to the Tuberculosis Association.

Experimental work on guinea pigs and 30 humans indicates that breathing germ-laden air may be as effective as the conventional shot in the arm for the administration of BCG, the anti-tuberculosis vaccine.

Members of the medical profession making the report at the meeting stated that they can see no reason why the method could not be used against polio and other diseases.

The new airborne vaccination has been tried in the University of Illinois College of Medicine laboratory in Chicago. Placed in a closed room for half an hour, 30 subjects breathed air which had been sprayed with BCG. Later examination showed that the vaccination "took" for 27 of the subjects.

Dr. Gardiner Middlebrook, who did the animal experiments at the National Jewish hospital in Denver, said that it took only a few of the inhaled germs to produce immunity. Only 25 germs were necessary as against the million needed for injection, he declared.

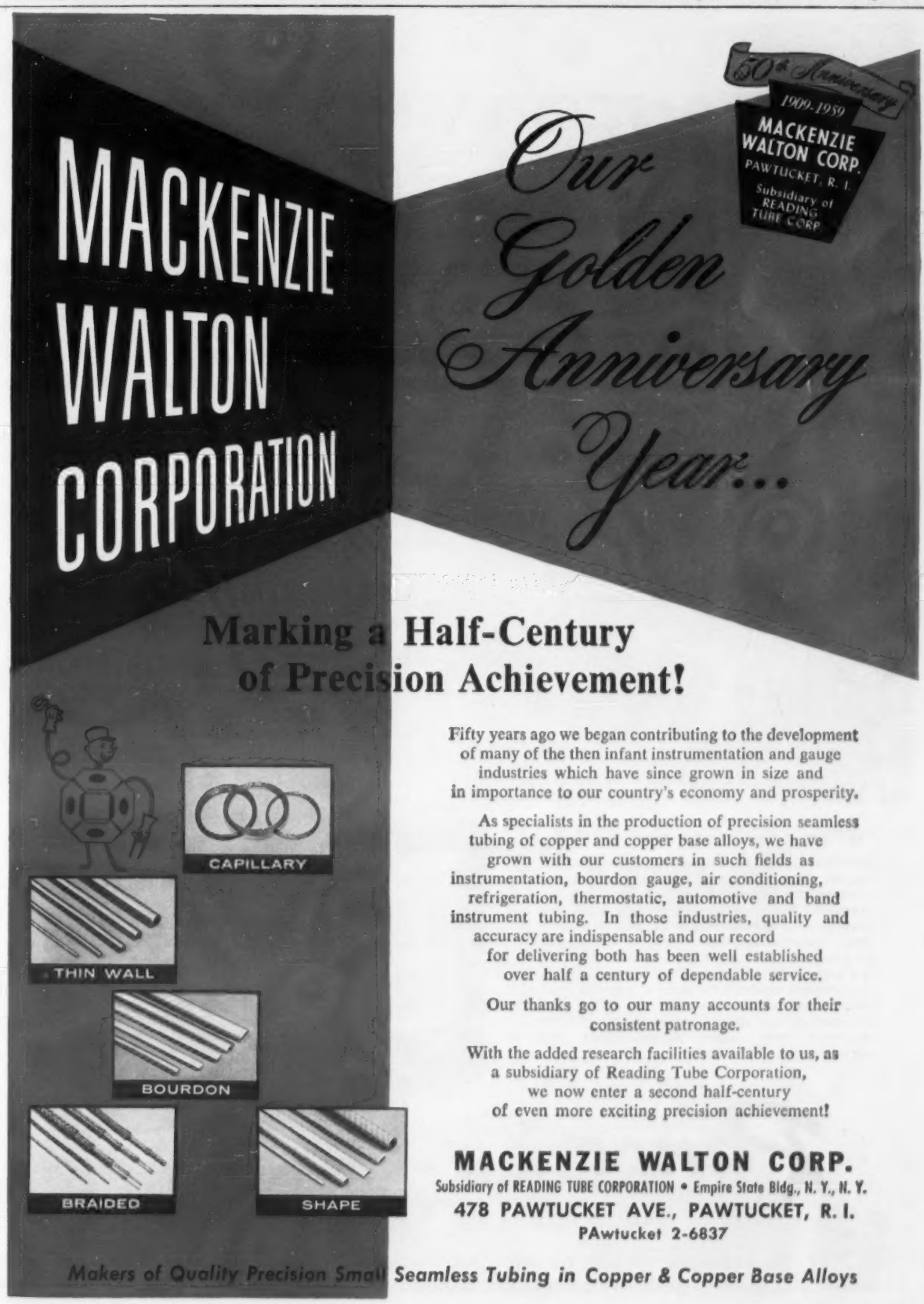
Declaring that the technique is safe and painless, Dr. Middlebrook commented that "it is unnecessary to elaborate on its convenience for individual or for mass vaccination."

Century Electric Moves 2 Offices

ST. LOUIS—Century Electric Co's. Richmond, Va. and Davenport, Iowa branch offices have moved to new quarters.

The new Richmond branch office's address is 3318 West Cary St. Telephone ELgin 9-2027.

New address of the Davenport branch office is 201 Plaza Building, 1821 State St., Bettendorf, Iowa. Telephone 5-4774.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Our Golden Anniversary Year...
Marking a Half-Century of Precision Achievement!
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Fifty years ago we began contributing to the development of many of the then infant instrumentation and gauge industries which have since grown in size and in importance to our country's economy and prosperity.
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Our thanks go to our many accounts for their consistent patronage.
With the added research facilities available to us, as a subsidiary of Reading Tube Corporation, we now enter a second half-century of even more exciting precision achievement!
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Makers of Quality Precision Small Seamless Tubing in Copper & Copper Base Alloys

Why Women Who Have Home Cooling Like It (*Part 1*)

NEW YORK CITY—Lennox Industries, Inc., a few weeks ago, invited 17 women from suburban New York City, all owners of Lennox home air conditioning systems, to lunch at a plush hotel overlooking Central Park.

Purpose: To get first hand information on what users think about air conditioning after living with it for a while—and to hear what the ladies do and do not like about the system installed in their own homes.

John W. Norris, Lennox president, acted as moderator of the forum. H. C. Krayenhoff, general manager of Lennox' Syracuse, N. Y. Div., Bud Merrill, advertising manager, and other Lennox officials listened attentively.

A comprehensive report of the women's comments were printed on page 8 of the May 18 issue of the NEWS.

However, actual words the homeowner uses to express her opinions and relate her experiences are often more weighty and more revealing than a straightforward report of what she said.

With that in mind, the NEWS presents here direct quotations extracted from the official transcript. For convenience they are divided into four areas of interest: why and how these women bought home air conditioning, the benefits they are receiving from it, their relationships with the installing dealers, and their complaints about how their systems perform. The latter two sections will be published in a subsequent issue.

Why They Bought Central Home Air Conditioning

For Investment

Mrs. HAROLD B. SNYDER, JR., Watchung, N. J.: Just to have it. My husband says it is hard to sell a house today without air conditioning. It has to have air conditioning, especially up in a certain price field. And my daughter has a slight case of asthma and my husband has heart attacks and sinus. He is not a cripple, but he sounds like it. We find it is very, very good.

NORRIS: How long have you had it, incidentally?

SNYDER: Three years in August.

NORRIS: You have found now that by living with the windows and doors closed, and now that the system is balanced, that there is a fairly even temperature all over. Did you get the comfort you hoped to get when you bought the equipment?

SNYDER: It's too much comfort. I am staying home too much.

* * *

I Loathe Heat

Mrs. MURRAY GALUTEN, Hartsdale, N. Y.: That is very simple. I cannot stand the summer. I loathe the heat. We had a wide window unit which proceeded to make me ill because I would get colds walking in and out. Since my husband's office was air conditioned and the New York Central was so obliging, I said, "Why should I be relegated to the dark ages?"

I was very stubborn. At times I thought that he would not buy it. But he finally did buy it.

However, we weren't making any progress until Jim Wood (dealer) walked in. My husband has agreed with me that it is perfectly delightful. As I say, now I am ready for the car (to be air conditioned).

* * *

For Children's Sake

Mrs. R. E. HOFFMAN, Livingston, N. J.: I feel that air conditioning is as important as heat where children are concerned.

NORRIS: Tell me more. This I have been waiting for.

HOFFMAN: I first realized that when I gave birth a few years ago to one of the children. I have three home now and I am expecting another.

Right in the delivery room was air conditioning. Right in the nursery was air conditioning. I was quite concerned. I asked my doctor, "How can they put a brand new infant in air conditioning? Won't they catch cold?"

He said, "I advise you to air condition your house. In the first place, a newborn infant tends to lose a few ounces in the first month or so. They sleep more comfortably. They don't perspire and thus they don't lose weight. Feeding problems are easier and they don't come down with prickly heat."

I think that is very important.

NORRIS: Your windows are closed so that it is quiet?

HOFFMAN: It is quiet. I find that it is a pleasure to come back now. It is easier to maintain health, which is quite an attraction.

NORRIS: That is a new one.

* * *

Needs Her Sleep For Gardening

Mrs. ARTHUR THURSTON, Cheshire, Conn.: I am a gardener. I work hard at it. Gardening is my hobby. In the warm weather you need all the pep that you have.

Well, when you have hot nights and you toss and turn and you perspire. You get up in the morning and the garden looks as though it was 10 acres instead of one.

I knew that I had to work out there because gardens don't wait. But I would be just simply exhausted.

Another thing in connection with getting the good night's sleep, which we get now and which we did not get before we had air conditioning, is that we changed bed clothes every day. We perspired so that you couldn't possibly use the same linens two days.

How They Bought Air Conditioning

Read Manufacturers' Ads

Mrs. MORTON LAPIDUS, Fairlawn, N. J.: I always wanted air conditioning but didn't want window units. I think they are a terrible nuisance. I didn't think that air conditioning was something we could afford for

(Continued on page 15)

RANCO IMPROVED "O" SERIES CONTROLS

Higher Electrical Capacity

Service men, take note. Ranco "O" Series commercial refrigeration and air conditioning controls have a stepped-up, approved electrical rating —now 16 amps. full load, 96 amps. locked rotor with 115 volts a.c. and 10 amps. full load, 60 amps. locked rotor with 230 volts a.c.

You'll notice a restyled cover, too. Cover and mounting brackets are now finished in a durable, wrinkled black paint. Type and code numbers are stamped on top and back of control frame for sure identification in case nameplate is detached. Increased electrical ratings are listed on insulator board inside cover. New nameplates do not carry type and code numbers or ratings.

Ranco "O" Series Controls are now better than ever in performance, easier than ever to identify.

"O" Series Controls for every installation

010-1401 (shown) is a low-pressure control opening on drop in pressure. Other standard "O" Controls are low pressure, high pressure, dual pressure, dual temperature models with variations according to fixed and adjustable differentials, operation on rise or drop in temperature or pressure, with or without manual reset, cut-out and cut-in ranges, capillary tubes. Gives you replacement controls for general applications in commercial air conditioning and refrigeration installations and special applications in ice cube machines, milk coolers, signal circuits, wide-cycle defrost, and others.

Ranco® INCORPORATED
COLUMBUS 1, OHIO

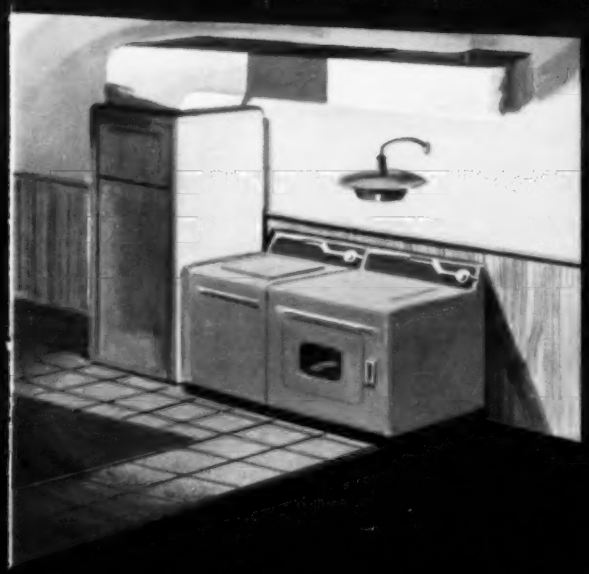
Service Men! Get this book! — Ranco Book No. 1660 lists "O" Series, and nearly 5,000 other Ranco replacement control applications. See your Ranco wholesaler for a copy (not available from factory).

the quality tells . . . the quality sells

JANITROL

new waterless

ADD-ON COOLING SYSTEM



adapts most any warm air furnace
for powerful, efficient summer cooling
. . . features exclusive PRIDE O' YARD
air-cooled compressor-condenser unit

add to your profits... add to your prestige... with

JANITROL

ADD ON COOLING

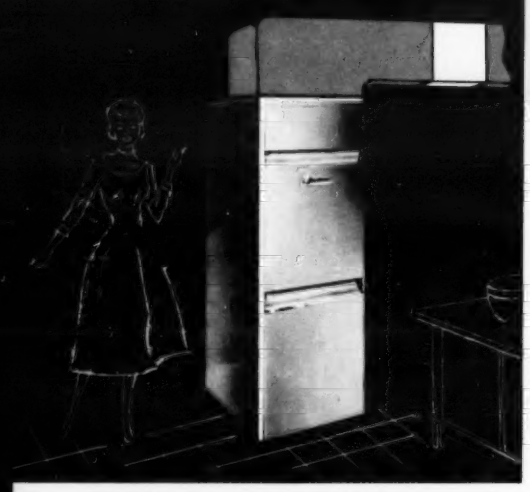
quality engineered and built to help you sell and grow!

If you're looking for big, new profit opportunities without installation and service headaches, Janitrol ADD-ON waterless cooling is made to order for you.

With the complete Janitrol ADD-ON Cooling line, you can adapt most any forced air furnace for *really efficient* central cooling . . . cash in on the booming market for summer comfort.

ADD-ON COOLING components are system-engineered for easy installation with quiet, powerful performance that makes one job sell another. Evaporator coil fits in supply outlet duct in either upflow or downflow systems. The beautiful Janitrol PRIDE O' YARD Compressor-condenser unit—styled by a leading designer—is specially engineered for cooling with outside temperatures to 125° F. And waterless operation eliminates plumbing, sewage and water supply problems—lets you install cooling for *less*, and appeal to more prospects.

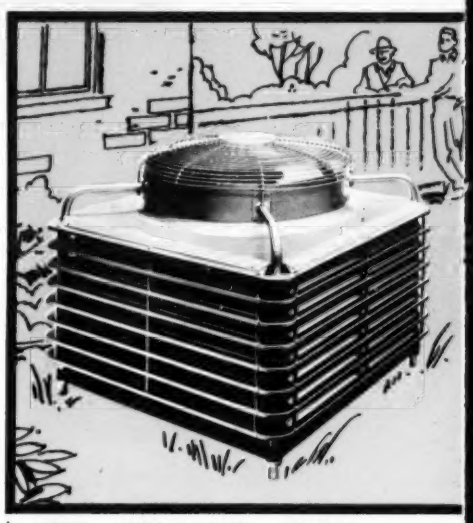
Janitrol evaporator coil and PRIDE O' YARD units are available in sizes to handle the heat gain on most any residential cooling job. Get the good word on Janitrol waterless ADD-ON Cooling from your Janitrol representative, or mail the coupon to us right away. Sell and grow with Janitrol!



Exclusive JANITROL Evaporator Coil design allows installation in either horizontal or vertical position. Features fast drain-off of condensate to minimize re-evaporation into circulating air during compressor "off" cycle. No floor space needed, no noise or vibration because there are no moving parts inside the house!

Exclusive JANITROL PRIDE O' YARD Compressor-condenser Unit

adds distinctive beauty to any yard—completely outmodes all other units of its type. Exclusive louvered design allows air circulation from all sides while shading condenser from sun at all times . . . boosts cooling efficiency and results in lower current drain. Air exhausts out top, instead of sides . . . no damage to nearby growing things from exhaust air. Rugged, weatherproof construction with every necessary safeguard for children and pets. Compressor-motor is hermetically sealed for years of trouble-free performance—*warranted in writing for five years!*

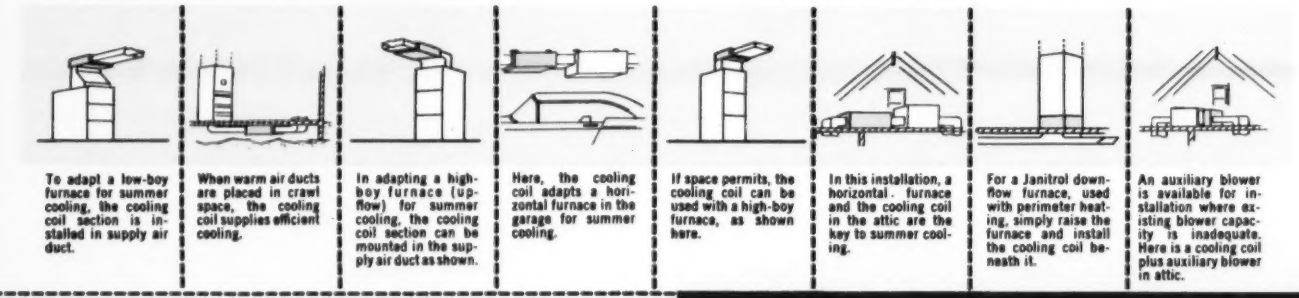


Install Janitrol Add-on cooling in homes with or without a basement . . . provide full central cooling with big savings by using existing ducts!

CAPACITIES

SRA-7	22,000 btu	A-403	45,000 btu
SRA-9	35,000 btu	SRA-11	58,500 btu
A-401	45,000 btu	A-603*	76,000 btu

*Not illustrated—for larger residential and light commercial applications.



To adapt a low-boy furnace for summer cooling, the cooling coil section is installed in supply air duct.

When warm air ducts are placed in crawl space, the cooling coil supplies efficient cooling.

In adapting a high-boy furnace (upflow) for summer cooling, the cooling coil section can be mounted in the supply air duct as shown.

Here, the cooling coil adapts a horizontal furnace in the garage for summer cooling.

If space permits, the cooling coil can be used with a high-boy furnace, as shown here.

In this installation, a horizontal furnace and the cooling coil in the attic are the key to summer cooling.

For a Janitrol downflow furnace, used with perimeter heating, simply raise the furnace and install the cooling coil beneath it.

An auxiliary blower is available for installation where existing blower capacity is inadequate. Here is a cooling coil plus auxiliary blower in attic.

Call WESTERN UNION Now!

Address Your Collect Wire to:

HARRY C. GURNEY, General Sales Manager
Janitrol Division, Surface Combustion Corp.
Columbus 16, Ohio (In Canada: Wire Moffat's Ltd., Toronto 15)

JUST SAY—"Rush me full details on Janitrol Select Dealer Program"

You'll do better by far as a ...

JANITROL SELECT DEALER

WIRE COLLECT NOW for proof . . . and a preview of the profitable future that's yours to enjoy!

Women Cite Benefits of Cooling--

(Continued from Page 12, Col. 5)

quite awhile until I say the Lennox advertisement. Then we found out that we could.

* * *

Wrote In for Literature

Mrs. ANNA BITTNER, Ridgewood, N. J.: (She added to and remodeled an old house). "We were prepared to install air conditioning and heating. I saw an ad in a magazine about Lennox. I wrote in for the literature just out of curiosity. Jerry Fallberg of the Norman Sheet Metal Co. called on me.

He said, "I would like to tell you about our system when you have time. May I have an appointment with you?"

Sure. I made an appointment. We sat down for two hours one morning and he explained everything to me so beautifully that I was sold and made the change to Lennox.

* * *

Architect Sold Her

Mrs. M. SOLOMON, Hillsdale, N. J.: My architect was my salesman. I didn't know anything about air conditioning. He said, "I can supply the engineer. We can give you the best figure. My selection would be a Lennox. I have a great deal of confidence in them." And I went along with him.

* * *

Offered by Builder

Mrs. MILTON PRINCE, Livingston, N. J.: With us it was just offered by the builder. I would like to ask one question. They told us that a 3½ ton would be sufficient. Now my husband, last summer, felt that we should have had a bigger one. Is there anything we can do about it now?

NORRIS: Why don't you have our man check that because it could be that something might be able to be done.

* * *

The Benefits They Are Receiving

Hired Help and Children

HOFFMAN: There is a shortage of help where I live. I know when I interview a girl, they prefer me. Not that I am easier, but my house is air conditioned.

NORRIS: I said that that sells.

HOFFMAN: Yes, it definitely does.

My house also stays cleaner and my plants thrive better.

NORRIS: What about the kids running in from playing out in hot weather and coming into this cool house? Any shock, any colds as a result of it?

HOFFMAN: Well, my children go to day camp and the infant stays home. No, I don't find that to be so.

NORRIS: That has not bothered you at all?

HOFFMAN: No.

* * *

Outdoor Barbecues

NORRIS: You mean that you do not use your barbecue yard any more?

SNYDER: I never do. We don't like it so we eat in.

LAPIDUS: I used to run out to turn the steak over and get so hot in the process that I had to run back in the house.

GALUTEN: You should get a rebate on porches that you don't use any more.

HOFFMAN: Talking about barbecueing, I find it reversed. We do more barbecuing now. We love to have our steaks barbecued. But then, of course, I always used to eat outside. I used to be annoyed with the bugs. Now that we can barbecue and bring it right inside, it's terrific. I don't mind it. I don't have the bugs. I don't have a breeze or anything.

NORRIS: Now are you barbecuing outdoors?

HOFFMAN: Yes.

NORRIS: So you run fast enough to get the bugs off?

Home Comfort

GALUTEN: We are simply delighted (with air conditioning). The only incidental problem that has arisen is that we have more company in the summer. We are home too much. Summer is a sheer delight. In fact, when we got our new car, we got air conditioning in the car so that I am thrilled with it.

* * *

Cleaner Home

Mrs. G. M. KILCARR, Hillside, N. J.: I have always changed summer drapes — the old-fashioned spring cleaning business—and last summer I didn't because I didn't see any reason why I should take them down. I think I am going to give up spring cleaning as such.

BITTNER: We used to go through it twice a year, spring cleaning, both in the spring and in the fall. I happen to be involved in a lot of club activities. These things keep me so busy that I could never get the house cleaning done.

I do all my own work now, as the club activities end in June. I have June, July, and August. I do my house cleaning in the summer, which would have appalled me before because of the heat.

NORRIS: That's interesting.

BITTNER: Now I don't mind a bit.

GALUTEN: I have velvet chairs in my living room. They used to appall me at this time of year. Now, they don't bother me because they are not hot and you don't mind them.

One other thing. I used to close my blinds and close my windows as soon as I got up to keep the heat out. I used to stumble through the house and say that I didn't understand why I had to live in the dark all summer just to keep cool, and to have to stumble over fans in the process.

Well, now I simply am shocked. I open my blinds wide and I look out and see the sun and can still be delightfully cool.

When we changed our system last year and put the complete Lennox system in, I put white draperies up. Honestly, they are not dirty.

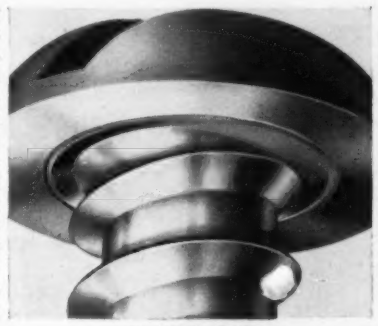
* * *

THURSTON: When we had hot water, my tables are dark wood, I could dust them and 15 minutes later I walk around and they need it again. In the summer when I had my air conditioner on, I would be able to go through the house—swish through as I call it—in the morning and by dinnertime everything still looks nice.

I think that also takes care of your clothes, too. The clothes laying in your closet don't get dusty the way they do if you

(Continued on next page)

Take a good look at any ordinary tapping screw. See for yourself how the last thread deteriorates just under the head. That deterioration means you lose a portion of the engagement in every fastening operation. It often means slippage during final tightening—a "spinner" which must be removed and replaced. ■ With the revolutionary P-K *Hi-thred*, you get *full engagement* with the material—a bulldog grip throughout the entire length of the screw BECAUSE THE *Hi-thred* IS THREADED FULL TO THE HEAD . . . THE THREAD ACTUALLY TERMINATES IN AN ANNULAR ORIFICE IN THE HEAD ITSELF! ■ Next time you order, ask for P-K *Hi-thred*. You get this extra measure of holding power at no increase in cost! P-K *Hi-thred* tapping screws are available in production quantities in types A or Z in non-countersunk slotted or Phillips Recessed head styles. ■ Get samples and technical data from your nearby P-K "Bulk-Stocking" Distributor. Call him today!



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Air Conditioning Aids Allergies

(Concluded from preceding page)

don't have the air conditioner, because I am old-fashioned enough to know.

I don't like a closed closet door. I like to feel that there is circulation of air.

NORRIS: This is a completely new thought to me, Mrs. Thurston. Apparently your house has a circulating hot water heating system in it. The air conditioner is a separate system.

THURSTON: Separate system in the attic.

NORRIS: So in the summer time you are circulating air throughout your whole house. But you are filtering that air as you circulate?

THURSTON: Yes.

NORRIS: And you find that your house is cleaner with this circulating air than it is in the wintertime with no such filtering going on?

THURSTON: Another great advantage in air conditioning is that in the winter time when you don't have an air conditioner, everything is smoky. In summer, all you do is turn the fan on and in five minutes the air is clean as a bell.

* * *

Allergies

Mrs. KURT AKERSTEN, North Arlington, N. J.: If you have an allergy, and here I must say that I have hay fever, it helps. Last summer was the first time that I did not have to come downstairs with two pillows and sit almost upright.

NORRIS: Then it actually worked in your case?

AKERSTEN: It actually worked.

NORRIS: That I am glad to hear. You have the type of hay fever that pollen brings to you?

AKERSTEN: That's right. I also have one son who is allergic to various things—dog hair in particular. He had a very bad spell.

We went to a little party at a veterinarian's and he came home—this is the gospel truth—he came home and said, "Mother, I am so sick that I had to stop the car twice."

He threw up and he couldn't breathe. It was two o'clock in the morning. I wondered where at that hour in the morning I could get anything for this boy.

I know if you have adrenalin, you can give adrenalin to relieve that. But after he got into his room, the air seemed to clear it up. In about an hour he was asleep. He was perfectly fine the next day.

* * *

Mrs. REGINALD C. SMITH, Aquabogue, Long Island, N. Y.: I have a son with allergies, asthma. It's been wonderful for him. He comes in from being out playing and he is panting. Then in 20 minutes in an air conditioned room, he feels all better. He breathes normally. It does him good.

NORRIS: How long have you had it (air conditioning)?

SMITH: We have only had it for a year and a half.

NORRIS: Did you buy it because of the allergy problem?

SMITH: That had a great deal to do with it.

* * *

BITTNER: We sleep with our windows closed all the time. I had a lot of sinus trouble for many years. Since we sleep with the windows closed in winter, I don't have but maybe one cold a winter.

NORRIS: I have heard that story repeated over and over again. I am glad that you mentioned it because I believe in it. I think doctors are coming to believe that you should sleep with the windows closed for better health.

Clothes

AKERSTEN: It is much easier to get into your clothing with air conditioning. When you have perspiration dripping from you, you cannot put makeup on.

NORRIS: That's a thought.

LAPIDUS: As far as clothing is concerned, the children sleep in the same pajamas all year around now that we have air conditioning.

NORRIS: They sleep well?

LAPIDUS: They sleep well.

* * *

Hot Weather Husband

BITTNER: My husband loves the hot weather. He plays tennis all summer and golf. He doesn't like it if it's cold. I hate the warm weather.

Well, when he'd come home from playing tennis, I thought that he would be chilled. But no. He brings his friends back and they have beer and cool off.

NORRIS: Now, that is interesting. Does he work in an air conditioned office?

BITTNER: No he's in and out. He is a salesman.

NORRIS: He likes the air conditioning at home?

BITTNER: He finds it very comfortable. He says that it's a great joy to come home.

NORRIS: Do you think his next car will be air conditioned, because of this experience?

BITTNER: No. I don't think so. But he is happy to relax in a comfortable house.

(To Be Continued)

BRYANT

the AIR CONDITIONING YOU can sell with PRIDE

The outstanding appearance and new high styling of Bryant Air Conditioners add *eye appeal* to your showroom—*"buy-appeal"* too! Home owners prefer Bryant's beauty and compactness on sight, then fall in love with its quiet, economical performance.

EXCLUSIVE FEATURES LIKE THESE HAVE DOUBLED LAST YEAR'S SALES!

HEAVY-DUTY COMPRESSOR: An air conditioner is only as good as its compressor; Bryant has the finest—precision built for greater economy and dependability.

"MIX-FLO" BLOWER: Compact, space saving, yet moves ¼ more air than same size propeller fan; pulls air uniformly across cooling coil so every inch of surface does maximum work.

3-IN-1 CONDENSER COIL: Provides 10% increase in operating efficiency or 10% lower operating cost, by *after-cooling* the refrigerant liquid approximately 20%.

Exclusive Bryant Coils are adaptable to any installation: "VB" type with own blower (doesn't overwork furnace blower); "A" type, adaptable to most vertical furnaces; "H" type, for perimeter heating systems.

Certified by Air Conditioning Institute as conforming with ARI Standards.

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12 SOUND REASONS WHY YOU SHOULD BECOME A BRYANT DEALER!

1 **MULTIPLE LINES:** Furnaces, Air Conditioners, Boilers, Water Heaters, Unit Heaters—widest selection of models and prices to fit any market.

2 **EXCLUSIVE FEATURES YOU CAN SELL**—backed by 51 years of engineering leadership.

3 **FAST DELIVERY**—from complete local stocks.

4 **COMPLETE FINANCING AND CREDIT ASSISTANCE**—suited to your needs—administered by local people who know *you*.

5 **ON-THE-SPOT COUNSEL**—sales, design, engineering, service—from your nearby distributor or factory branch.

6 **SALES AND TECHNICAL TRAINING**—by experienced specialists—both locally and at the Bryant plant.

7 **BUSINESS MANAGEMENT GUIDANCE** from factory and distributor, to help you cut costs, get more business, make more money.

8 **LOCAL AD CAMPAIGNS**—field tested—with Bryant factory and distributor participation.

9 **SOUND SELLING POLICIES**—in effect for over 50 years—protect your business and profits.

10 **BRYANT'S NATIONAL REPUTATION** with architects, engineers, builders, utilities and home owners helps *you* sell.

11 **GAS AIR CONDITIONING** gives you big opportunity to GROW—close tie-in with Gas Utility promotions.

12 **BRYANT'S FINANCIAL STRENGTH** protects your *future*.

GET THE PROFIT FACTS! *Contact your Bryant distributor or write Bryant Manufacturing Company, Indianapolis, Indiana. In Canada: Bryant Manufacturing Ltd., Toronto, Ontario.*

. . . YEARS AHEAD IN YEAR 'ROUND COMFORT!

Thinking of —

- **changing territories**
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- **taking on new lines—**

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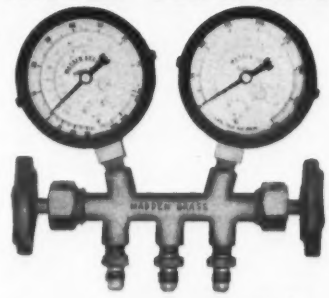
Your opportunity may be there.

NEW

. . . FOR EASIER FASTER SERVICING



Pat. Pending

Designed for convenient charging, purging, testing etc., this new compact unit features an all brass forged body, easy-grip hand wheels, Teflon packing and seat for positive shut-off. Equipped with dual scale 2½-inch pressure and compound gauges. Hose connections ¼-inch male flare, gauge connections ⅛-inch female pipe thread.

HANDY HOSE HOLDER

Attaches to back of testing unit so free end of hoses can be conveniently coupled when not in use. Keeps them dry and free from dirt.

SEE YOUR MADDEN WHOLESALER

MADDEN BRASS PRODUCTS COMPANY
AURORA 6, ILLINOIS, U.S.A.

10-Ton Packaged Conditioner Cools Blooming Mill 'Pulpit' at Ford Motor

DETROIT — A tough challenge is met by a 10-ton American Blower packaged air conditioning unit installed in the "pulpit" (operator's compartment) of a blooming mill at Ford Motor Co.'s Steel Div. operation in Dearborn, Mich.

Operators comfort in a work station such as this is reflected in the quality of the steel produced, it was pointed out by the Industrial Div. of American-Standard.

"Red-hot ingots pass directly beneath the pulpit on their way to the reducing rolls of the blooming mill where they are passed back and forth through power-driven rolls in the first step of the rolling process that will reduce them to sheet steel.

"While one ingot is being reduced into its new shape in front of the pulpit, another is delivered to a 'ready' position in back of the pulpit. The compartment is thus exposed to extreme heat from two directions.

"The temperature effect is further magnified by the need for large windows front and rear to provide the required wide-angle visibility for the operators.

"Equipped with a plenum take-off to a short overhead duct, the American Blower unit maintains a comfortable temperature at all times.

AMERICAN BLOWER packaged air conditioner cools blooming mill pulpit at Ford Motor Co.'s Steel Div. plant.

Underground Vault To House Chillers for Gulf Research Center

SYRACUSE, N. Y.—Gulf Research & Development Co., of Harmarville, Pa., one of the world's leading laboratories for scientific oil prospecting and petroleum research, is being equipped with two absorption refrigeration machines as a major step in providing air conditioning for the entire research center.

Announcement of the installation was made by Charles V. Fenn, vice president of Carrier Corp., which has already air conditioned several laboratories at the center.

A major portion of the more than 1,500 employes will work in a controlled climate when Gulf's air conditioning project is completed. Systems are being so designed that a high volume of exhaust air will carry off fumes generated in laboratory experiments with petroleum products.

The Carrier absorption machines, of 236-ton cooling capacity each, will use steam to produce chilled water for air conditioning units installed in parts of five major laboratory buildings and several smaller structures.

Rather than mar the research center's campus-like atmosphere, the absorption machines will be placed in an underground vault and covered with landscraping. From this centrally located refrigerating plant, chilled water for cooling will be piped through subterranean passages, which are also used as all-weather walkways by Gulf personnel.

Trailer-Mounted, Conditioning May Help Prevent Air Mishaps

DAYTON — Trailer-mounted, mobile air conditioning systems will play a major role in preventing future aircraft mishaps, according to Paul M. Augenstein, president, Airtemp Div., Chrysler Corp.

Augenstein made his prediction in connection with the announcement that Chrysler Airtemp had been selected by the Philadelphia Naval Shipyard to provide cooling equipment for 35 TACAN (for "tactical aerial navigation") systems to be used by the U. S. Navy, U. S. Air Force, and Federal Aeronautics Authority for control of aircraft in the vicinity of airports and other ground stations.

The air conditioning equipment will insure accurate, dependable operation of the TACAN system under any extremes of temperature, he explained.

"Complex electronic equipment such as the TACAN is subject to unreliable operation or even system failure unless cooled properly," the Airtemp executive pointed out.

TACAN provides automatic distance and direction to pilots within 200 miles of ground locations, and permits ground authorities to control the present and future positions of all aircraft in the vicinity. The system is planned for both military and civil use.

The Chrysler air conditioning equipment is mounted in a trailer, and consists of two 5-hp., air-cooled condensing units with custom-built evaporators and fan blowers. The system is designed for operation when outside temperatures range from 60 to 120°. When temperatures outside dip below 60°, outside air is used to cool the TACAN directly.

Augenstein said a special hot gas re-heat cycle had been included in the system to eliminate cycling under light load, when such cycling might disturb the TACAN signals.

Contract Let for Radar Shelter Air Conditioning

RALEIGH, N. C.—Bolton Air Conditioning & Heating Co., Inc. here received a Navy contract for the installation of temperature and humidity control for radar shelter at the Marine Corps Air Station in Cherry Point, N. C.

Only TWO PARTS SERVICE all B&G COMPRESSORS
Automotive type piston and heat treated connecting rod—both of light weight alloy.
Valve and cylinder sleeve assembly. Special iron alloy cylinder sleeves are removable; valves are highest grade Swedish steel.

You'll seldom need to service a B&G Compressor—but when you do, all the parts needed *can be carried in two hands.* Piston and rod assembly, and valve and cylinder assembly *will handle 95% of all B&G compressor repair problems!*

B&G Compressors are completely new in conception—*not* adaptations of 20-year-old designs. B&G engineering has created a compressor basically superior because it's basically simpler. These compressors have fewer maintenance problems, because they have fewer parts.

Add to this new superior design, *precision manufacture*—with every major part made and guaranteed by Bell & Gossett. The result is a compressor unmatched for efficiency, quiet operation and freedom from vibration. *Any vibration is no greater than that of a well balanced electric motor.*

B&G Compressors are incorporated in all B&G Package Liquid Coolers and Condensing Units. They can be equipped with multi-step capacity control systems...standard equipment includes gas and oil equalization ports, magnetic plugs and oil sight glass.

For greater efficiency, greater value per dollar, specify B&G Compressors and Refrigeration Equipment. Send for complete file of specifications and application data on B&G Air Conditioning and Refrigeration Equipment.

"Wouldn't wake a sleeping kitten"

BELL & GOSSETT
COMPANY
Dept. FT-47, Morton Grove, Illinois

Canadian Licensee: S. A. Armstrong Ltd., 1400 O'Connor Drive, Toronto 16, Ontario

COMPLETE LINE OF REFRIGERATION AND AIR CONDITIONING "PACKAGES" AND COMPONENTS

B&G Evaporator | B&G Centrifugal Pumps | B&G Condenser | B&G Package Liquid Cooler

They'll Do It Every Time

by

Jimmy Hatlo

I'M ALL IN! THIS JOB IS WEARING ME DOWN---MISS POTHOOKS--- HAVE YOU GOT ANY ASPIRIN? RUN DOWNSTAIRS AND GET ME SOME, WILLYA? FETCH ME A GLASS OF WATER---MAYBE IT'D HELP IF YOU RUBBED THE BACK OF MY NECK-UH--WHAT'S ALL THAT WORK PILED UP ON YOUR DESK?
HE'S WORN DOWN--WHAT ABOUT POOR EMMY? HE HAS HER TEARING AROUND LIKE A SIX-DAY BIKE RIDER---
BIG KEMO SABAY OUGHTA PUT AN INDIAN MEDICINE MAN ON THE PAYROLL---HE COULD PAY HIM OFF IN BEADS AND CUT PLUG----
HE EXPECTS HER TO DO EVERY-THING BUT WAX HIS MUSTACHE--AN' HIS SERVICE STATION MAN DOES THAT---
I'D LIKE TO RUB HIS NECK WITH SANDPAPER, BUT HE'S TOO THICK-SKINNED TO NOTICE----
STANDING BY AS THE BIG WHEEL RUNS HIS SECRETARY RAGGED WAITING ON HIM HAND FOOT AND CLAVICLE----
4-8
JIMMY HATLO
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World Trade Opportunities Brighten

REVOLUTIONARY economic association of six strong European nations (West Germany, France, Italy, Belgium, Holland, Luxembourg) now is in actual operation. Purpose of this historic European Economic Community amalgamation is that of promoting free trade between these nations—similar to that which flows through the 50 states of the U.S.A. so prosperously.

What does this mean to you and me? Quite a lot. Euromart is on its way toward becoming something really BIG for all of us. How and why is it so promising? Here is what is occurring:

(1) Progressive equalization and reduction of tariffs;

(2) Free movement of manpower and money among the six nations;

(3) Willingness to allow the most efficient producers—wherever they may be located—to manufacture for all.

Thus, ONE GIANT market, as in America. Moreover, political amalgamation (into an United States of Europe) is augured for the future. Political union often follows commercial homogenization.

European wage rates presently are one half to two thirds lower than those over here, but they are offset somewhat by higher material costs and overhead in the Euromart. Furthermore, while American wages steadily inch-up, they are not increasing so rapidly as those in Europe.

Thus it is that the outlook for U.S. exports is good; and for American investment abroad brilliant—particularly in the EEC. Today the 100 biggest American corporations have substantial overseas operations, and thousands more are getting into the act.

Will the Common Market (Euromart) work? Yes. It has overwhelming support of the politicians, industry, labor, and the intelligentsia over there. (Don't discount the influence of the professors. In Europe "eggheads" are respected.)

Trust by Americans in Euromart's future can be seen in the establishment of several well-sponsored mutual funds which are buying equities of Common Market industrial enterprises. As of now, stock in European manufacturing concerns looks quite attractive to American investors. Issues are not overpriced; returns are high.

Pooh-pooers sometimes scoff that foreign trade is not particularly important to our over-all economy, because it represents less than 10% of our Gross National Product. Also we hear that our high standard of living makes it difficult for us to compete in foreign markets. Neither allegation holds water.

In the first place, we'd be in an awful fix without that 10% export business. In the second place, many of our physical exports are being replaced profitably by branch factories, by licensing arrangements, fees and royalties, etc. Whether American products are manufactured here or over there, *sales* send dollars back to us.

It is noted that Japanese firms can sell cameras over here for less than an American firm can produce them. Nevertheless, last year we sold twice as much to Japan as we imported from her. Nippon eventually must find dollars to cover her unfavorable balance of trade with us—and that means either greater American exports to the Sayonara Land, bigger fee and licensing remittances, or both.

Moreover, it is true that if Congress abolished all tariffs, less than half a million Americans would need to find new jobs. Contrastingly, there are at least FIVE MILLION Americans whose jobs depend on world trade. They outnumber, more than ten to one, workers who might be displaced temporarily by the adoption of completely free trade on our part.

Another example: last year our exports to Venezuela provided jobs for nearly 200,000 American workers. At least 1,000 different business concerns in more than 950 cities and towns were beneficiaries of our commerce with this one small nation in South America.

Thus, citizens of the United States should pay continuous attention to our overseas trade relations. Conduct of our foreign commerce should concern us PERSONALLY.

Incidentally, we are competing *for keeps* with an international communistic conspiracy which is trying to destroy our way of life and happy homes for all time. The "cold war" now has settled down to competition for international trade.

As traders and investors, American businessmen bear a strong responsibility. Happily, it is matched by a magnificent opportunity. Expanded world commerce is the Key to Peace. And to greater prosperity for us all.

AN INTERNATIONAL INSTITUTION • SUBSCRIBERS ALL OVER THE WORLD

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AIR CONDITIONING HEATING & REFRIGERATION NEWS

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'The Conscience of the Industry'

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OFF THE CHEST

OPERATING COSTS MUST NOT BE OVERLOOKED WHEN COMPARING ECONOMY OF HEATING METHODS

Hancock-Wood Electric Cooperative, Inc.
North Baltimore, Ohio

Editor:

Mr. J. H. Elliott (May 11, 1959 issue) apparently does what many do in comparing electric heating with other methods. He compares only the cost of fuel. That's like figuring the annual consumption of gasoline as the only cost of owning a car.

One should be concerned with the cost of operation—not just the cost of fuel. There's a big difference.

Figure the cost of electricity for the furnace and blower, furnace service and repair, furnace cleaning and flue pipe and chimney maintenance, unit depreciation and obsolescence, and then assign a value for cleaning a house and household contents due to heating system grime — these are some operational costs. Total them and add to the cost of fuel—the result is the cost of heating.

In addition to some of the bonus features of electric heating—silence, zone control and absolute cleanliness—this method negates the need for chimneys, fuel storage space and furnace floor space. Electric heat is the only heat without built-in obsolescence.

Last, but not least, while natural gas (about the lowest cost of combustible fuel) was going up in cost by 50% over the last ten years—our consumers' "cost of fuel" was going down 28.6% during the same period. So even in this category electricity is gaining ground over fossil fuels.

In the light of these facts, it's rather evident why the prosecution Mr. Elliott suggests has not developed. There are no grounds—for electric heating *is* more economical.

H. ROBERT BRADNER,
Power Use Dept.

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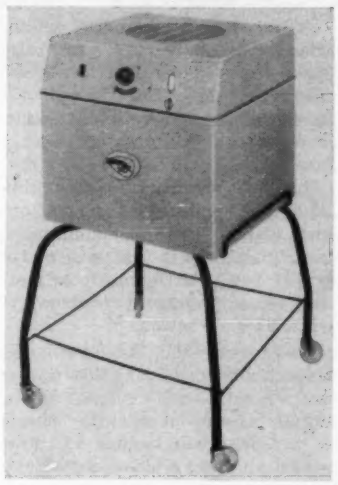
90% Efficiency Claimed for Portable Room Size Electronic Air Cleaner

McKEES ROCKS, Pa.—Electro-air Cleaner Co., Inc. here has announced the addition of a new "room size" model to its line of electronic air cleaners.



The new portable, plug-in unit has a built-in, two-speed motorized fan, requires no water or drain connection, and is light enough so that it can easily be moved from room to room, according to the company.

The unit "is a 'true electronic air cleaner' in every sense of the word," the announcement said. Its air handling capacity is 225 cu. ft. of air per minute at 90% efficiency as determined by the National Bureau of Standards Dust Spot Test.

"This means that 90% of all cigarette smoke, pollen, dust, dirt and other air-borne particles—even as small as 1/100 of a micron—are removed from the air that passes through the unit.

"Designed primarily for use in homes and apartments, the unit is equally effective in conference rooms, private offices, and any other small commercial or industrial building areas where cigarette smoke and dirt is a problem."

Whirlpool Endows Chair of Marketing at American University

ST. JOSEPH, Mich. — The first professorial chair to be endowed at the School of Business Administration of the American university, Washington, D. C., has been established as the Whirlpool Chair of Marketing.

Created through a grant from Whirlpool Corp., the new chair will conduct research into problems and trends in marketing and will make special studies of the home appliance industry for the purpose of helping appliance retailers improve their marketing and management skills.

John A. Hurley, vice president in charge of sales, said that the American university had been selected for the endowment because of its close association with the appliance industry and its successful experience in conducting the NARDA Institute of Management, now entering its fifth year.

Norge Starts Testing New Gas Refrigerator

CHICAGO — Norge Div. of Borg-Warner Corp. will start testing a new gas refrigerator—an 11-ft. type with automatic ice cube maker—with utilities later this month, Judson S. Sayre, president, announced June 2.

"If all goes well, we'll be in mass production and marketing it nationally through 87 distributors and hundreds of utilities by mid-fall," he said.

Norge also will introduce a combination gas washer-dryer in the fall. Introduction of the gas refrigerator will round out a full gas laundry and kitchen line, Sayre noted.

Bernz To Market Portable Refrigerator From Luxembourg

ROCHESTER, N. Y. — Otto Bernz Co., Inc. expects to market a small, 44-lb. European manufactured portable refrigerator this fall.

It is made by the Societe des Refrigerateurs, which will soon be acquired as a wholly-owned subsidiary of the local firm. The company is located by Vianden, in the tiny grand duchy of Luxembourg.

The refrigerators are expected to retail for between $60 and $70 and to operate on gas or electricity. With an adapter, they can be plugged into a cigarette lighter of a car.

The Luxembourg company will eventually manufacture products similar to those made by Bernz here, according to Moses Capell, secretary-treasurer.

Bernz employs 340 people in the plant and offices at 740 Driving Park Ave. They make a propane gas cylinder for various uses and a ceramic grille for broiling meat.

All-Electric Homes Get Special Rate

DENVILLE, N. J.—A special "All Electric Home Rate" for customers who make exclusive use of electric service for all household purposes, including house heating, has been put into effect by New Jersey Power & Light Co. and Jersey Central Power & Light Co., subsidiaries of General Public Utilities Corp.

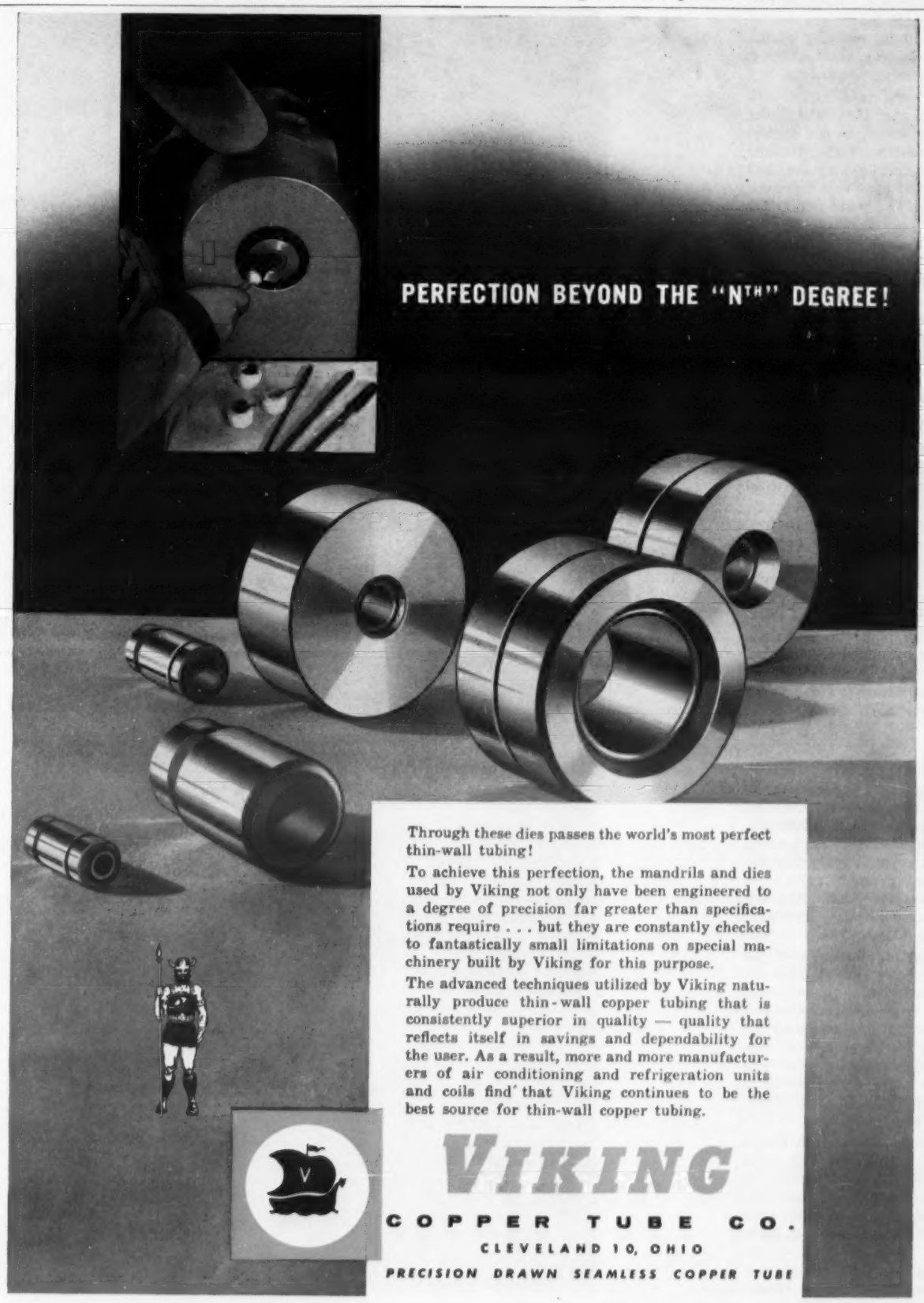
The rate per month for the first 300 kilowatts per hour or less is $7.50 with all over 300 kwh at $.018 per kwh, with no demand charge, it was reported.

WAS Names Froehlich General Service Mgr.

PITTSBURGH — Kent B. Froehlich has been named general service manager for Westinghouse Appliance Sales, according to L. G. Berger, general manager of the distributing firm which handles Westinghouse room air conditioners, dehumidifiers, major appliances, TV receivers, and stereophonic instruments.

The position is a newly created one, Berger said, designed to coordinate the activities of 46 metropolitan service centers which WAS conducts throughout various parts of the country.

Since July, 1957, Froehlich has been district service manager in WAS's Detroit area and before that, for ten years, was branch service manager in Detroit.


PERFECTION BEYOND THE "Nth" DEGREE!
Through these dies passes the world's most perfect thin-wall tubing!
To achieve this perfection, the mandrils and dies used by Viking not only have been engineered to a degree of precision far greater than specifications require . . . but they are constantly checked to fantastically small limitations on special machinery built by Viking for this purpose.
The advanced techniques utilized by Viking naturally produce thin-wall copper tubing that is consistently superior in quality — quality that reflects itself in savings and dependability for the user. As a result, more and more manufacturers of air conditioning and refrigeration units and coils find that Viking continues to be the best source for thin-wall copper tubing.
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CLEVELAND 10, OHIO
PRECISION DRAWN SEAMLESS COPPER TUBE

Basement Room Warm Air Supply Outlets Should Deliver Air At Floor Level

Accompanying material comprise summaries of the more significant papers presented during formal sessions of the 65th annual meeting of ASHAE.

PHILADELPHIA — **Use of formulas developed for combustion heating fuel requirements give abnormally high energy estimates for heating with electricity.**

"When electric heat is applied on a room-by-room basis to structures properly insulated for economic balance between first cost and operating cost, conventional estimating methods indicate much more energy required for heating than is shown by available consumption records," stated R. L. Boyd, product manager, Commercial Comfort Heating Div., Edwin L. Wiegand Co., Pittsburgh, in a report before the 65th annual meeting of the American Society of Heating & Air-Conditioning Engineers.

Conventional data, Boyd held, would indicate that electricity at ¾¢ per kwhr. is not generally competitive with combustion fuels; yet experience has demonstrated that it is competitive even at 1¾ cents per kwhr.

"There are several reasons for this apparent inconsistency," he continued. "One important factor is that evaluation of combustion heating systems has been largely devoted to determination of useful heat delivered to the space compared to the heat value of the fuel input.

"With electrical resistance heat, determination of such efficiency is unnecessary as conversion of electricity to heat is at 100% efficiency and heaters are most frequently located within the spaces being heated."

Another important factor: internal sources of heat and sun effect contribute materially to satisfying heating requirements in well insulated buildings, regardless of heating system used.

"There is need for authentic and realistic evaluation of practical methods for predicting energy requirements for heating with electricity," Boyd concluded.

●

"Heating by hypocaust, as used by the ancient Romans, has been proved to be a remarkably efficient system of heating—perhaps more intelligently applied than present forms of radiant heating," suggested Edwin Daisley Thatcher, architect, New York City.

(The heating medium of the hypocaust was the mixture of smoke, combustion gases, and excess air from an open fire, and the hypocaust is essentially an apparatus for drawing off this mixture by natural draft. The apparatus was, in the main, in the shape of a hollow floor, Thatcher explained.)

A study of the Forum Baths heated by hypocaust has more than historical significance, he claimed, adding that "these examples of the advantages of proper orientation and of a respect for the conditions of the climate could well be studied today where we tend to ignore many things through a mistaken reliance on gadgetry."

●

When heating basement rooms with warm air, the supply outlets should be located to deliver the air at floor level, preferably near the perimeter of the room to blanket the exposed walls and windows with warm air. This was one finding reported in a paper by J. R. Wright and D. R. Bahnfleth, both of the University of Illinois.

When outside wall locations are not feasible, the heated air should be delivered from low inside wall locations.

The increase in fuel consumption caused by heating the basement room was less than would be anticipated from the increase in calculated heat loss of the heated space because the basement was normally heated to some degree by vagrant heat losses from furnace casing, smokepipe, and ducts.

Outlets which delivered air at floor level required a greater fuel consumption than those delivered at ceiling level, but the space temperatures were also higher.

In the test house used for the investigation, zone control was not considered necessary on the basis of day-to-day temperature differences between the rooms.

●

A hot-wire anemometer which allows measurement of air speeds regardless of flow direction was described by J. F. Kemp, research officer, National Mechanical Engineering Institute, Pretoria, South Africa.

In a practical application like studying air speed distribution in a ventilated room, commonly used instruments are subject to errors due to attempts to adjust the sensing element to comply with flow direction.

"Although the hot-wire anemometer described in this paper is not perfectly omni-directional," Kemp admitted, "there is a fairly wide range of flow conditions which does not affect its response."

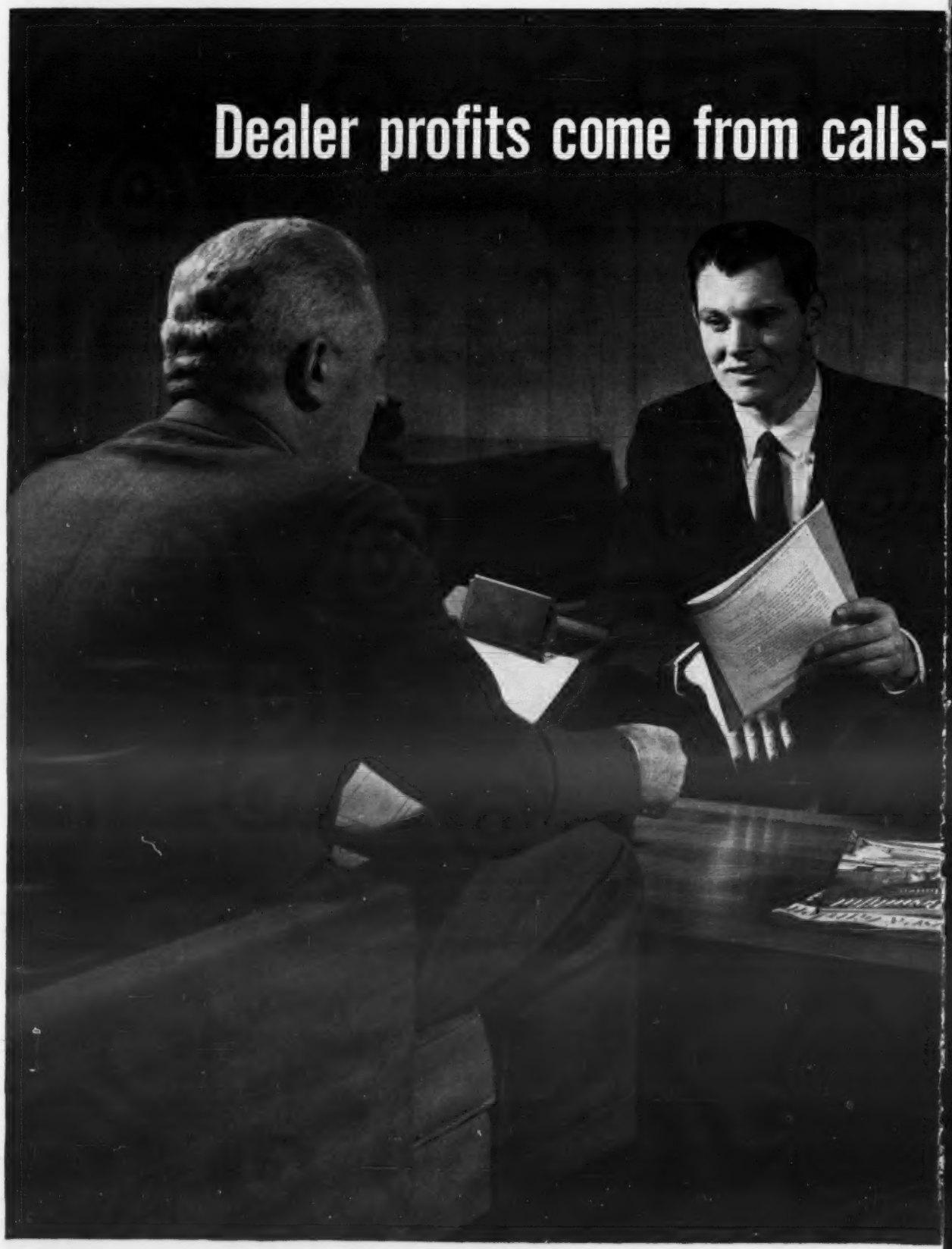
Fined $10

Elyria Heating Man Installs Cooling Job As Exam Goes Ungraded

ELYRIA, Ohio—Installing an air conditioner without a franchise (city license) resulted in a $10 fine plus court costs for Lawrence Peniston of Peniston Heating and Air Conditioning Co. here.

Peniston pleaded guilty to the charge. The charge was brought against Peniston by James J. Seres, city building inspector, on recommendation of the city's heating board of examiners.

Peniston, who has a heating franchise, took an examination for an air conditioning franchise on May 9. As of June 5, the examination papers had not been graded.



UMWA Sees Large Gain from Electric Heating, Cooling—Proposes Study Groups

WASHINGTON, D. C.—The electric heating industry has a new ally—the United Mine Workers of America.

To the miners, electric heat can be translated "coal by wire." The more electric heat—and cooling—that is sold, the more coal will be mined, the more work they will have, and the better their wages will be.

It is as simple as that.

As Michael Widman, Jr., director of the UMWA's research and marketing department, said in a report culminating a year's study of electric heating, "The UMWA has a vital interest in the promotion of the use of electric heat.

"As an organization, the union always is interested in helping to expand markets for the coal industry. And the biggest customer of the coal industry is the electric utility industry. . . .

"The 162 million tons of coal purchased by the electric industry in 1957 accounted for the generation of 55% of all the electricity produced in the country. . . .

"In 1957, the electric industry was able to produce a kilowatt hour of electricity with only .93 pounds of coal (in 1949 it took 1.24 lbs.).

"The use of 3,200 kwh. by the average residential consumer in 1957 meant that he burned up about 1.5 tons of 'coal by wire.' By 1975, if he uses 10,000 kwh. as estimated, he will be burning up almost five tons of 'coal by wire.'

"And if he installs electric heat, the figure will be doubled and he will be consuming about 10 tons of 'coal by wire'. . . .

"Thus, the domestic use of electricity alone, in terms of tons of coal consumed, would be equal to 1957's total use of coal to produce electricity."

Widman reasoned that coal had nothing to fear from rival sources of power for generating electricity. He asserted that "one of the principal reasons for the ability of the electric utility industry to expand as rapidly as it has . . . is that the coal industry offers the electric industry stable prices.

"The price of steam coal, at the mine today, is almost exactly what it was in 1950. This is true despite the fact that the American coal miner today has the highest wage scale of any production worker in the country."

Rival fuels, he claimed, are becoming more expensive or are already too expensive to be economic.

However, Widman asserted, his department's year-round study of electric heat, convinced him that it was not being promoted by utilities as much as it could be.

While some utilities are enthusiastic about electric heating to offset summer peaks created by air conditioning demand and are offering more favorable rates, there are some "roadblocks," he admitted.

He enumerated such roadblocks as combination gas and electric utilities who take passive positions on promoting electric heat, "propaganda" by gas and oil salesmen that electric heat is an expensive luxury and an impractical novelty, "hidebound" architects, builders, and government officials who won't try something new, and lack of knowledge on the part of utility employes.

To remove these roadblocks, the UMWA's research and marketing department offered these recommendations:

1. Utility companies must emphasize better service to their customers.
2. Utility companies must conduct an extensive educational program for its employes at all levels.
3. An extensive sales campaign should be conducted in all areas served by the utility especially directed at new homes.
4. Utility companies should conduct educational programs for students from high school level up. These young people will soon be building or buying homes.
5. Utility companies must conduct educational campaigns on electric heat among architects, engineers, and government officials.
6. Utility must make sure that any all-electric homes on its lines are as nearly perfect, from the standpoint of efficient heating, as it is possible to make them.
7. Utilities should insist on proper insulation in all homes that are to be heated electrically.
8. Utility should establish a favorable rate structure for electrically heated homes.
9. All-electric living should be sold as a package.

In conclusion, Widman suggested that since there were so many people — utilities, manufacturers, contractors, insulation industry, and coal industry — who will benefit from the expansion of all-electric living, a central committee to coordinate the activities of all these group might be formed.

"Such a group could meet periodically to review accomplishments and map plans. The exchange of ideas would be mutually beneficial."

—not call-backs!
It's surprising what heating and air conditioning manufacturers can learn when they're willing to roll up their sleeves and work side by side with the most important man in the business: you, the dealer.
Close Lennox cooperation in the field resulted in the finest sales and service schools in the industry. This policy enables *your salesmen* to share experiences . . . improve their selling techniques . . . learn to close more sales, faster. And your installers become more expert in making installations right the *first* time (without profit bleeding follow-up calls and make-over work).
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Norbert Schill, Head of Schill Heating, Dies

CLEVELAND — Norbert Schill, 66, president of Schill Heating Co. and a past president of the Warm Air Furnace & Air Conditioning League of Cleveland, died recently in Lutheran hospital.

He and his father, Peter, headed one of the first Cleveland firms to manufacture and install central gas heating equipment. The company was founded by his grandfather, John, in 1875 in Crestline, Ohio.

Brixzen Heads Arizona Group

PHOENIX, Ariz.—Earl Brixzen of Tucson was elected president of the Associated Plumbing, Heating & Piping Contractors of Arizona during the 10th annual convention here.

Westinghouse Tests Rental Plan for Room Conditioners for Apartment Owners

MANSFIELD, Ohio—A plan to rent brand new appliances, including room air conditioners, to apartment house owners and operators and by which new models can replace them at frequent intervals is being tested by Westinghouse Electric Corp.

The new proposal which offers two, three, and five-year lease arrangements is being made to owners and operators of multiple dwelling units in five of the nation's largest rental housing markets—New York, Washington, Chicago, San Francisco, and Los Angeles.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

W. E. Slabaugh, manager of contract sales for Westinghouse appliances, estimated managers of rental properties annually tie up in excess of $200,000,000 in purchasing appliances for their units. He said 10% of the nation's housing consists of rental properties, much of it equipped with refrigerators, ranges, room air conditioners, dishwashers, freezers, washers, and dryers.

"The Westinghouse plan would free the capital now invested in appliance purchases for other uses," he said. "Furthermore, it assures frequent replacement with new and up-to-date models and improves the rental value of the property."

He pointed out that normally leasing arrangements will be available for longer terms than conventional instalment financing and yet the door is left open for ultimate purchase at attractive pricing.

The rental charges are graduated depending on the number and kind of appliances and the length of the contract. Westinghouse will extend the contract, if desired, beyond five years on a year-to-year basis.

Service labor charges are included in the lease for the entire contract. Standard warranties for parts which apply to the sales of appliances will be used for those leased under the plan.

Financial arrangements for the program will be handled through the Westinghouse Credit Corp., a wholly-owned subsidiary.

The replaced used appliances at the conclusion of a rental period will be reconditioned by Westinghouse distributor and sold through dealers specializing in used appliances.

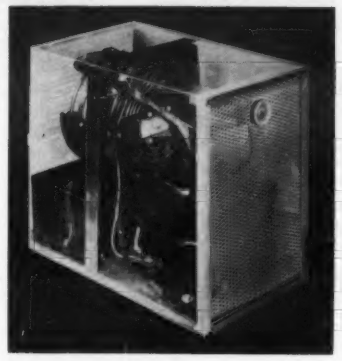
See-Through Demonstrator Boosts Dehumidifier Sales, Gibson Finds

GREENVILLE, Mich. — Experimental sales floor tests show a new dehumidifier display can increase sales nearly 20%, according to J. F. Klintworth, Gibson Refrigerator Co. dehumidifier sales manager for dehumidifiers.

The display consists of a standard Gibson dehumidifier with a transparent plastic cabinet replacing the standard steel shell.

It enables salesmen to demonstrate how a dehumidifier does its job.

"Most people are aware of what a dehumidifier does, but few realize just how it works and how foolproof the operation is," Klintworth explained. "We made up this experimental model with a 'see-thru' shell and tested it in the southeast with excellent results."



PLASTIC cabinet on this Gibson demonstrator model allows salesman to show customer how dehumidifier performs.

An experienced salesman using the plastic-sided demonstrator sold 33 dehumidifiers in one week, while an equally good salesman in another store in the same area, but without the aid of the demonstrator models, sold 28 units, he said.

"We found that actually seeing moisture condense on the dehumidifier evaporator coils and drop into the plastic container was the best selling argument for the unit's performance we could have," Klintworth said.

Gibson is making the demonstrators in quantity for shipment to dealers in all areas, he added.

Mathes Introduces 1-Hp. Room Unit To Supplement '59 Line

FORT WORTH, Texas — A new 1-hp. room air conditioner was introduced recently by The Mathes Co., division of Glen Alden Corp., by means of a special mailing to its national field sales organization.

The unit is designed to supplement the firm's 1959 line.

Named "Texas Giant," this unit, model 10H29 D, operates on 230 volts, 7.5 amps., and develops 12,100 B.t.u.h., tested and rated in accordance with ARI 110-58 (ASRE 16-56), the company said, adding: "At those conditions this new unit, operating at 1,680 watts is extremely efficient, developing 7.2 B.t.u. per watt of input current."

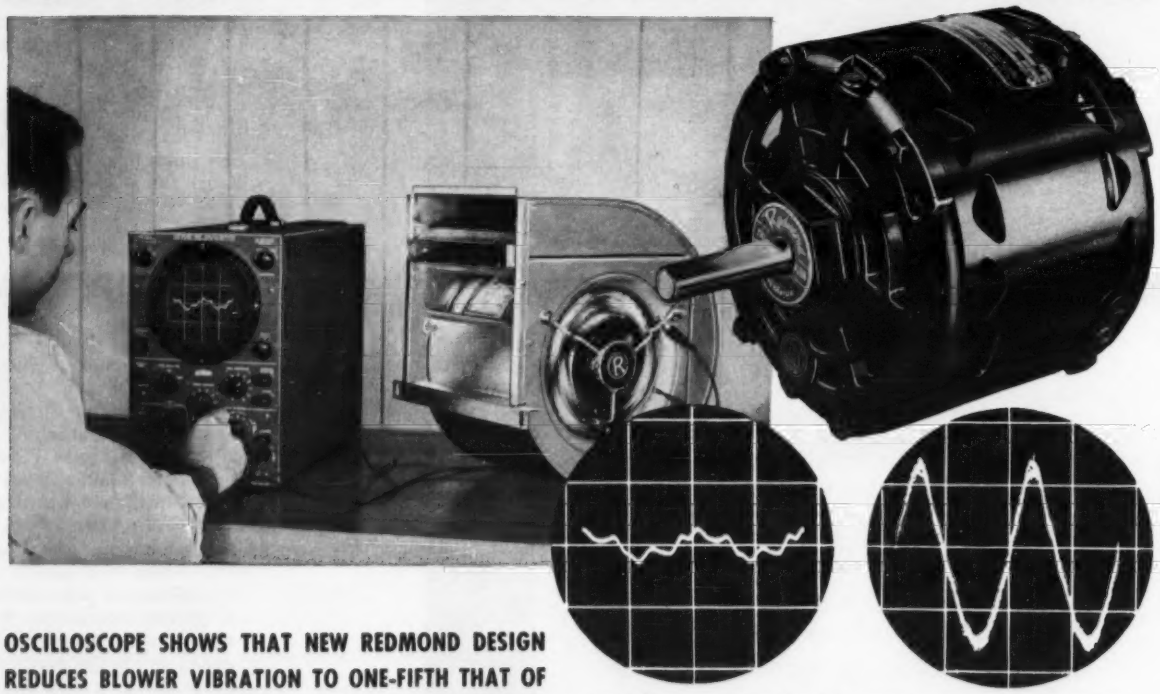
A deluxe unit, it includes a cross ambient type thermostat, two-speed fan control, adjustable air deflecting louvers. It is built upon the Mathes phenolic laminated five-year-guaranteed rust-proof base, and is delivered equipped with all aluminum non-rusting slide-in housing, according to the firm's announcement.

The unit includes an all aluminum permanent type filter, and is available in a choice of two hand rubbed hardwood cabinets in tropical or mahogany finish.

Neil S. Larsen Dies

TOLEDO—Neil S. Larsen, 74, founder of Larsen Plumbing & Heating Co., died recently in Toledo hospital. He was active in the MCAA, ASHAE, and NAPC.

New *Redmond* Motor Is Quietest For Direct Drive Blowers



OSCILLOSCOPE SHOWS THAT NEW REDMOND DESIGN REDUCES BLOWER VIBRATION TO ONE-FIFTH THAT OF UNITS USING CONVENTIONAL SHADED-POLE MOTORS

These photographs of the oscilloscope screen show the reduction of vibration in the blower when the Redmond Type AY Micro-Motor is used. The photo at the left shows blower vibration with the Redmond AY; the one at the right shows vibration with a competitive motor.

You can see for yourself on the oscilloscope screen that the Redmond Type AY MicroMotor reduces blower vibration to only one-fifth that of competitive motors running in the blower. Whether you test with vibration testing equipment, a mechanic's stethoscope, or an oscilloscope, you will conclude that the AY is the quietest direct-drive blower motor available. Use it to solve the problem of vibration in your blowers.

The AY Tri-Flux motor is designed and manufactured in every way to give years of trouble-free service and whisper-quiet operation. The Tri-Flux design adds a third flux path, making possible a larger diameter shaded-pole motor that is more efficient and has higher starting and running torque than conventional shaded-pole motors. The positive oil system provides force-feed lubrication. Recirculating the oil assures maximum bearing life.

The new AY is ideal for a wide variety of applications requiring a quiet, economical, quality motor. Redmond sales engineers are skilled technicians whose primary function is applying a motor to your product. Contact us at Owosso, Michigan, and we will have the Redmond sales engineer in your district call you at once. See your telephone book for locations of sales offices in Cincinnati; Cleveland, Dallas; Newark; El Segundo, California; and Oak Park, Illinois.

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New 12-page catalog describes and illustrates basic line of Redmond fractional horsepower electric motors, blowers, and special products. Send request for your free copy to Redmond Company, Inc., Owosso, Michigan.

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Program for ASHRAE Lake Placid Meeting -

simultaneously each morning and Tuesday afternoon.

The conferences will cover domestic refrigerator engineering (Monday morning), industrial ventilation (Tuesday morning), and cryogenics (Wednesday morning). The four forums are scheduled for Monday afternoon.

Association committee meetings will begin on Saturday before the convention opens and continue throughout the meeting. A brief business session at which reports of the officers and committees will be presented is set for Monday, as is the welcome luncheon.

Social events include "His" and "Her" golf tournaments on Monday and Tuesday, outdoor steak fry and special program Monday evening, and banquet and dancing Tuesday evening.

The technical program follows:

MONDAY, JUNE 22

9:30 a.m.—First Technical Session
COMPRESSORS

"An Analysis of Turbine Driven Centrifugal Refrigeration Systems"—W. G. Dorsey, Jr., zone manager, Worthington Corp.

"Effects of Refrigerant Properties on Centrifugal Compressor Impeller Dimensions and Stage Performance"—F. J. Wiesner, Jr., senior engineer, and H. E. Caswell, manager, Centrifugal Refrigeration Engineering Dept., Carrier Corp.

"Free Piston Compressor in an Air Conditioning System"—R. J. McCrory, chief, R. W. King, assistant chief, and J. H. McNinch, project leader, Mechanical Research Div., Battelle Memorial Institute.

9:30 a.m.—Second Technical Session
VENTILATION

"Automatic Comuter for Fan Testing"—C. H. Pountney, Jr., director of research, and D. W. Skipworth, senior research engineer, Viking Air Products.

"Evaluation of Filters for Removing Irritants from Polluted Air"—N. A. Richardson, assistant director, Institute of Industrial Cooperation, and W. C. Middleton, associate research psychologist, Dept. of Engineering, University of California.

"Fundamental Analysis of Chimney Performance and a New Method of Chimney Design and Performance Evaluation"—W. G. Colborne, associate professor, Dept. of Engineering, Assumption university, Windsor, Ont., Can., and W. C. Moffatt, lecturer, Dept. of Mechanical Engineering, Royal Military College of Canada.

9:30 a.m.—Domestic Refrigerator Engineering Conference

"SHOULD THE ICE BOX RETURN?"

"Control of Temerature"—E. A. von Arb, chief engineer, Revco, Inc.

"Humidity and Temperature Conditions"—F. P. Speicher, biologist, and E. W. Zearfoss, development engineer, Philco Corp.

"Air Circulation in Freezer Compartment—Benefits and Problems"—C. H. Wurtz, manager, Refrigerated Appliances Engineering, Frigidaire Div.

2 p.m.—Forums

1. "Status of New Utilization Voltage Proposals for Air Conditioning Equipment." Moderator: A. S. Anderson, electrical engineer, Ebasco Services, Inc.
2. "Icemaker Design Considerations." Moderator: D. E. MacLeod, engineer, Carrier Corp.
3. "Immersion Chilling of Poultry." Moderator: E. N. Kerrigan, manager, York Corp., Chicago.
4. "Research, the Engineer, and the Appliance Industry." Moderator: Dr. E. A. Baillif, chief engineer-refrigerators, Whirlpool Corp.

TUESDAY, JUNE 23

9 a.m.—Third Technical Session
NOISE

"Investigation and Control of Refrigerator Noise"—Dr. E. A. Baillif, and J. P. Laughlin, Product Engineering Dept., Whirlpool Corp.

"Investigating Household Refrigerator Compressor Noise"—R. C. Binder, professor, School of Mechanical Engineering, Purdue university.

"Acoustical Testing of Mufflers for Refrigerant-12 - Oil Refrigeration Systems"—W. R. Danielson, J. L. Martin, and A. F. Martz, Jr., Research Laboratories, Whirlpool Corp.

"Suppression of Oscillations in Gas-fired Residential Heating Equipment"—A. A. Putnam, assistant division chief, and C. F. Speich, Battelle Memorial Institute. (By title only).

"Radiant Heat Control In Idustrial Plants"—W. G. Hazard, Industrial Relations Div., Owens-Illinois Glass Co.

1:30 p.m.—Fifth Technical Session
GENERAL

"Condensation Between the Panes of Double Windows"—A. G. Wilson, head, and E. S. Nowak, Div. of Building, National Research Council, Ottawa, Ont., Can.

"Evaporative Cooling for Common Storages of Fruits and Vegetables"—R. S. Ash, assistant to president, International Metal Products Co.

"Controlled Atmosphere Apple Storage Process and Its Requirements on Refrigeration Structures and Systems"—J. W. Zahradnik, associate research professor, Agricultural Engineering Dept., University of Massachusetts.

1:30 p.m.—Sixth Technical Session
SOUND LEVEL

"Standards of Sound Level for Equipment"—C. M. Ashley, chief staff engineer, Carrier Corp.

"Experimental Study of Grille Noise Characteristics"—B. H. Marvet, mechanical engineer, Div. of Design, Tennessee Valley Authority.

"Effect of Fuel Composition on Oil Burner Noise"—Wm. A. Beach, R. W. Sage, and H. F. Schroeder, Esso Research and Engineering Co.

WEDNESDAY, JUNE 24

9 a.m.—Seventh Technical Session
GENERAL REFRIGERATION

"Comparison of Fluoroalkane Absorption Refrigerants"—B. J. Eiseman, Jr., Freon Products Laboratory, E. I. du Pont de Nemours & Co., Inc.

"Estimating Water Content of Certain Drier But Uncharged Hermetic Refrigerating Compressors"—H. M. Elsey, chemical consultant, Oakmont, Pa., and J. B. Kelley and R. B. Sharpe, process engineers, Refrigerator-Freezer Engineering, Westinghouse Electric Corp.

"Viscosity of Refrigerants In the Vapor Phase"—O. W. Witzell, professor, and C. Z. Kamien, instructor, Dept. of Mechanical Engineering, Purdue university.

"Repeated Scrape Abrasion Testing of Enameled Wires In Gaseous and Liquid Refrigerants"—F. F. Trunzo, G. J. Bich, and G. W. Hewitt, Insulation Dept., Westinghouse Research Laboratories.

9 a.m.—Eighth Technical Session
AIR CONDITIONING

"Determination of Effectiveness of Window Shading Materials on Reduction of Solar Radiation Heat Gain"—Dr. R. C. Jordan, head, and J. L. Threlkeld, associate professor, Mechanical Engineering Dept., University of Minnesota.

"Heat Flow Through Glass With Roller Shades"—Necati Ozisik, research engineer, and L. F. Schutrum, research supervisor, ASHRAE Research Laboratory.

"Evaluation of Three Room Air Distribution Systems for Summer Cooling"—J. J. Reinmann, research engineer, Thompson Products, Inc.; Alfred Koestel, associate professor, Heat Power Engineers, and G. L. Tuve, professor of mechanical engineering, Bingham Laboratories, Case Institute of Technology.

"Surface Odor Adsorption and Retention Properties of Surfaces"—W. F. Hopper, research engineer, ASHRAE Research Laboratory.

9 a.m.—Cryogenics Conference
CLOSED CIRCUIT TRANSPORTATION OF CRYOGENIC FLUIDS

"Transfer of Cryogenic Fluids—Design Aspects of Transfer Lines, Valves, Couplings, and Associated Components"—Dr. R. B. Jacobs, Cryogenics Engineering Laboratory.

"Cryogenic Pump Design"—L. Schafer, Pesco Products Div., Borg-Warner Corp.

"Cryogenics Insulation Materials and Techniques—3 x 10^{-5} B.t.u./Hr.-Ft. °F"—Dr. R. H. Krupschot, Cryogenics Engineering Laboratory.

"Instrumentation Methods and Techniques for Monitoring and Controlling Closed Circuit Transportation of Cryogenic Fluids"—Clarence Gettelman, chief of Instruments Systems Research Branch, Lewis Flight Propulsion Laboratory of NASA.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

TO EACH HIS OWN-climate, that is-

WITH "BUFFALO" ZONE CONTROL CABINETS

He's comfortable because the heat's on in his office. She's comfortable, too — but her office area is air cooled. The executive offices are on the shaded north side of the building and a cold wind is blowing. The stenographic department is located in the windowless central portion of the floor, where internal heat load raises the temperature.

Time was when conditions like these could only be corrected the expensive way — by installing several separate air conditioning units for each of many zones.

Now, with a *single* "Buffalo" Zone Control Cabinet, you can provide low-cost heating, cooling, dehumidifying — in any desired combination — for each area in your offices or plant. Controls for each zone can be manual or automatic.

We all know that a comfortable working climate increases personnel efficiency. Your offices or plant can have individual zone climate control — *without the expense of several separate units.* It will pay you to investigate "Buffalo" Zone Control Cabinets. Call your "Buffalo" engineering representative, or write for Bulletin AC-220.

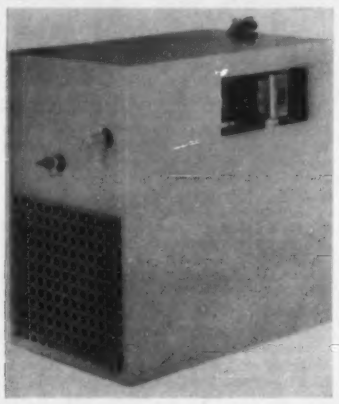
"Buffalo"

BUFFALO FORGE COMPANY
Buffalo, N. Y.
Buffalo Pumps Division, Buffalo, N. Y.
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

VENTILATING • AIR CLEANING • AIR TEMPERING • INDUCED DRAFT • EXHAUSTING • FORCED DRAFT • COOLING • HEATING • PRESSURE BLOWING

Packaged Liquid Chiller Features Close Control

● A new force-flow packaged liquid chiller, manufactured by Remcor Products Co., Dept. AH&RN, 321 E. Grand Ave., Chicago 11, is for the refrigeration, circulation, and closely controlled temperature of water, liquid chemicals or acids, or many types of corrosive or non-corrosive liquids, the company announced.



"It can be used in scientific and laboratory work, chemical, photographic and lithographic processes, transistor and electrical parts testing, tool quenching, product cooling during manufacture, etc.," the announcement said. In ¼, ⅓, and ½-hp. sizes, it is available with air or water-cooled condenser.

"The chiller will maintain bath temperatures in ranges from -30° F. to +75° F. within ±2° F., ±½° F., or ±1/10° F. Models with a temperature range of +15° F. to +75° F. are equipped with corrosion resistant stainless steel type 316 evaporator and corrosion resistant Zytel nylon pump with stainless steel shaft and fittings."

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Hudson Announces New Mixing Faucets

● Introduction of its new line of mixing faucets, for both bar and fountain use has been announced by Hudson Industries, Inc., Dept. AHRN, 4400 St. Aubin, Detroit 7.

These faucets provide two, three, or four syrups, plus soda water from a single head.

Features are plastic insulated head, self-closing, no drip valves, and guide slots for handle that will not permit intermixing under any circumstances, according to the company.

Trion Filters Patterned After Atomic Sub Models

● A new Trion electronic air cleaner "that is patterned after the units developed for the U.S. atomic submarines" has been introduced by Trion, Inc., Dept. AH&RN, McKees Rocks, Pa.

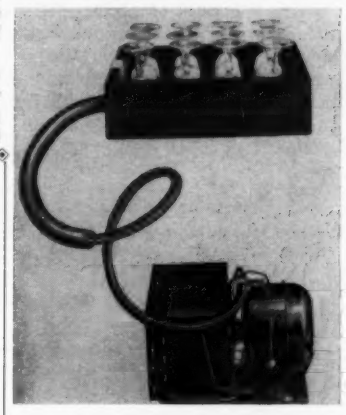
Known as the model LCT (Low Cost Trion), the unit "offers true plate-type electronic air cleaning at low cost ($219 and up)," the company said.

"The Trion LCT is designed for either horizontal or vertical air flow and is fitted into the return air duct ahead of the furnace and/or air conditioner. No water or drain connections are necessary. All parts, including the collector cell, can easily be removed from the cabinet for cleaning. The cell can be washed in a tub or hosed down with a common garden hose, dried quickly and put back into service, all within a matter of minutes.

"The LCT model has an efficiency rating of 90% or better (according to the National Bureau of Standards Dust-Spot Method

using atmospheric air) in the removal of dirt, dust, polen, germs, and other airborne contaminants."

Unit Applies Frost on Glasses In Minutes



● "Frosty-Glass," described as a quick-frosting conduction unit for frost-coating and chilling glassware, is now being manufactured by the Frosty-Glass Co., a subsidiary of A. & W. Root Beer Co., Dept. AH&RN (T), 11918 Wilshire Blvd., Los Angeles 25.

The unit "applies a sparkling coat of frost on glasses in just minutes, building business by adding eye appeal and taste appeal to every drink served," it was stated.

The unit consists of a case with a refrigerated cold plate and 12 aluminum cones. The cold plate is connected by a flexible 6-ft. copper hose to the ⅛-hp. portable compressor.

Approximately 16 in. by 13 in., cases are available in plastic or stainless steel.

New Horizontal Air Conditioner—7 ways to add

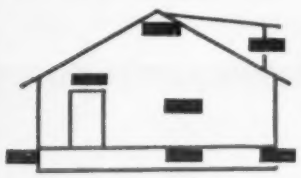
FRIGIDAIRE DRY-COOLING

to new and old homes—with or without ducts

Horizontal Models in two sizes—AZZ-190 (19,000 Btu/Hr.) and AZZ-340 (34,000 Btu/Hr.)

Model AZZ-190 shown with optional plenum—available for both models.

HERE'S FLEXIBILITY TO SOLVE ANY PROBLEM

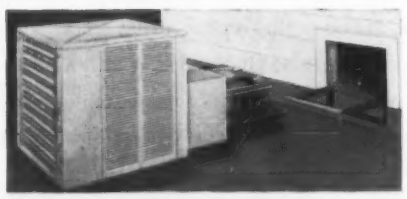


1. Unit flush-mounted in attic—suspended from beams or floor-mounted.
2. Condenser section mounted outside attic.
3. Transom installation with ducts for cool air distribution.
4. Area cooled directly without ducts: through-wall with plenum.
5. Basement or crawl space installation unit all outside.
6. Basement or crawl space installation unit all inside.
7. Basement or crawl space, condenser section outside.

The new Frigidaire Horizontal Air Conditioner is the "attic type" unit that installs anywhere! Now, in one complete Frigidaire package-type air-cooled series including control box, you have the flexibility to install the unit where most practical to save time and money. Compact? You bet! Through-the-wall installation of the largest model requires an opening only 2′ x 2⅝′. Easily connected to most warm air furnace ducts, to separate ductwork, or without ducts using optional plenum.

Customer satisfaction? It's built-in! Full-rated Dry-Cooling capacity, heavy-duty Frigidaire cabinet construction, famed Frigidaire Super Meter-Miser compressors, sound-hushing insulation, weather-resistant materials and economical operation are but a few of the better-by-Frigidaire quality features.

There are many more benefits for both you and your customers. See your Frigidaire Representative or write Frigidaire Division, General Motors Corporation, Dayton 1, Ohio.

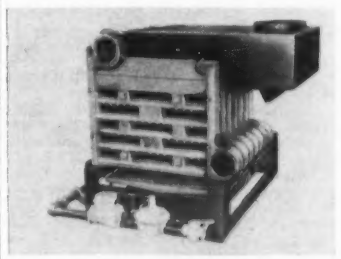


NEW TRANS-WALL UNIT—SLIDES IN LIKE A DRAWER!

Slashes air conditioning installation costs up to 50%! Coil section simply slips through wall opening, slides into housing previously installed above or below forced warm air furnace—or at end of horizontal furnace. 24,000 and 35,000 Btu/Hr. cooling capacities.

GM FRIGIDAIRE
Built and Backed by General Motors

it cools, cleans and dries the air!



Boilers Designed for Use with Low Ceilings

● A new Series 150 gas-fired cast iron boilers designed to solve the problem represented by low ceiling boiler rooms, has been introduced by Peerless Heater Co., Dept. AH&RN, Boyertown, Pa.

Manufactured in 33 sizes from 600,000 to 5,400,000 B.t.u. input for steam or hot water systems, the Series 150 is equipped with horizontal to vertical flue collectors and draft diverters. This new designed assembly maintains a predetermined maximum height of the flue outlets regardless of boiler size, the firm said.

Special cast iron core construction of the boiler sections was stressed. It was also noted that the six horizontal tubular water passages in a "closed H" design form completely boxed gas passages "for greater efficiency and economy of operation."

'Frostemp' Auto Units Now In Production

● The new "Frostemp" refrigerated automobile air conditioner is now in production by Lindustries, Inc., Dept. AH&RN, 1041 Foch St., Fort Worth, Texas.

Frostemp units are available for all popular American cars and many foreign makes, the company said.

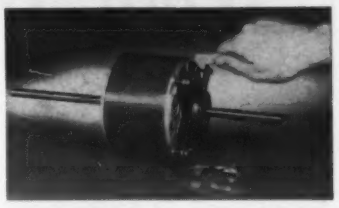
"Cold air is circulated in the automobile by two squirrel cage blowers drawing the air through the evaporator coil," it was pointed out.

"Four louvers direct the air to all parts of the car's interior from the low profile case.

"A new all aluminum condenser with double inner-finned construction permits a greater heat load to be dissipated from the vehicle. Flexible lines throughout make for easy and efficient installation," according to the company.

The new Frostemp was designed by William E. Lind, Sr., Lindustries' president and Robert M. Craven, chief engineer.

Replacement Motor Has Adjustable Adapter



● An answer to the problem of replacing shaded-pole fan motors in room air conditioners and furnace blowers, in the form of a 5½-in. diameter replacement motor with a new adjustable mounting adapter, has been announced by the General Purpose Motor Dept., General Electric Co., Dept. AH&RN, Fort Wayne, Ind.

The adjustable mounting adapter is supplied with the motor to be installed by the repair or serviceman.

The adapter is mounted on the motor's extended through bolts so that it can be adjusted axially along the motor shaft, making possible a variety of mounting-ring locations.

For applications requiring band mounting of the motor, or for mounting by the motor's through bolts, the adapter can be omitted to provide for minimum motor length.

Included with the new shaded-pole replacement motor are 2¼-in. diameter mounting rings which are assembled on the motor and adapter.

For applications requiring 2½-in. diameter mounting rings, additional ring adapters are supplied which will increase the cushion-ring diameter to 2½ in.

Accessory mounting rings, not supplied with the motor, are also available from the factory to meet other variations in motor mounting on air conditioners and heaters, according to the firm.

The motor is available in the following shaded-pole ratings: 4-pole models from ⅛ through ¼ hp., 115 or 230 volts; 6-pole models from 1/10 through ⅛ hp., 115 or 230 volts.

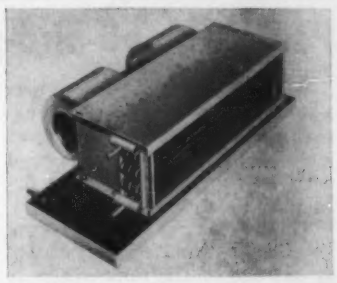
Air Conditioning Unit Is for Hotels, Apartments

● A year-round horizontal fan-coil air conditioning unit for apartments, hotels, and motels is announced by the Plumbing & Heating Div., American-Standard, Dept. AH&RN, 40 W. 40th St., New York City 18.

This unit, the type 30 "Remot-aire," is designed for use with hot or chilled water in concealed overhead installations, such as in dropped ceilings or closets. With the use of this unit, air conditioning can be removed from the exterior wall, freeing its design, particularly for floor-to-ceiling glass, it was pointed out.

Fan load and motor speed are said to be carefully matched. Effective, quiet conditioning is assured by the large-surface-area three-row coil, the division said.

"The unique drain-pan design of the unit offers positive sweat protection," it was stated. "This design eliminates all metal-to-metal contact between pan and the bottom of coil. It also assures clear draining and easy cleaning.



No auxiliary drain pan is necessary."

All connections are located for unobstructed working room, the manufacturer points out.

Want More Details?

ADDITIONAL details on products that are described on these pages may be obtained by writing the manufacturer at the address given in each What's New story.

ALUMALIFT

primarily designed for the installation and servicing of Air Conditioners in transoms

Total weight only 50 lbs.
Will raise unit from 36" to 108"

No servicing company can afford to be without one

Dealers and Distributors write for particulars and other models

AMBLE 157-06 NORTHERN BLVD. Flushing, N. Y.

Seeing is believing with the Sporlan See•All

....the amazing single dot moisture and liquid indicator that takes the guess work out of servicing refrigeration equipment

A Single Green Dot indicates when the system is DRY... a Full-view Sight Glass shows if the system is Fully Charged!

Seeing is believing! When the indicator is green...system is dry...no worries. When yellow...system too wet...danger ahead, immediate action necessary. When chartreuse...the caution range or warning signal...change drier before serious trouble develops. These color changes are supported by accurate calibrated data giving the moisture content in PPM at various liquid line temperatures. The color change is completely reversible, and changes as the moisture content of the system varies.

The See•All may be installed anywhere in the liquid line... for convenient visual inspection...and for liquid lines larger than ⅝", a new by-pass kit is now available. Same accurate moisture and liquid indication readings...eliminates added cost of sightglass or indicator of full line size.

The single dot indicator of the *See•All* works equally well on Refrigerants 12–22–40–500.

Order See•Alls from your Sporlan Wholesaler today... and believe what you see ...avoid the possibility of moisture problems.

Further...add Catch-Alls to the order for perfectly clean, dry, acid free refrigeration and air conditioning systems.

Ask for **Bulletin 70-10**

Our 25th Anniversary ... 1934...1959

SPORLAN VALVE COMPANY

7525 SUSSEX AVENUE ST. LOUIS 17, MISSOURI

EXPORT DEPT. 85 BROAD STREET NEW YORK 4, NEW YORK

Frick Develops System for Chilling Poultry at 50-Bird-per-Min. Rate

WAYNESBORO, Pa.—A new system for chilling poultry, using refrigerated water and a stainless-steel flume equipped with a conveyor, has been developed by Frick Co.

The poultry, at a temperature between 80° and 95° F., enters at one end of the tank, which is 54 ft. long. Cold water, at 32° or 33° F., enters at the opposite end, and is not recirculated.

The poultry is conveyed in counter-current fashion against the stream of refrigerated water by fingers or rakes. After moving through the cold water for about 1½ hours, the birds are lifted out of the flume by the fingers, at a temperature of 36° F.

The original of these counter-flow-continuous ("C-F-C") chillers is in operation at Holly Farms Poultry Processing Plant at Wilkesboro, N. C. This unit is handling 50 birds per minute, weighing 2½ lbs. each.

"The fresh water is chilled in stages by means of high-efficiency coolers combined with an ice reserve unit, which uses off-peak power," Frick explained. "The ice builder, by storing 'cold,' takes care of surges in the load, and provides the coldest possible water."

All parts in contact with the chickens are made of either stainless or hot-dip galvanized steel. The water in the Frick chiller is kept fresh and clean by the one-way counter-flow effect, it was pointed out. Debris is immediately removed by the washing action when the birds first enter the water. Yield and product are reported excellent.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.
Only 25¢ each.

Dunham-Bush Names Joseph M. Querner

WEST HARTFORD, Conn. — Dunham-Bush, Inc. has announced the appointment of Joseph M. Querner as product manager for the established line of vending products of its subsidiary, Heat-X, Inc., Brewster, N. Y.

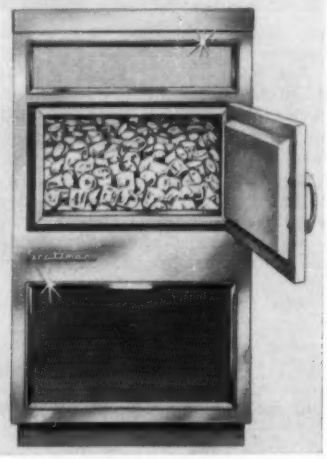
J. M. Querner

Querner comes to Heat-X from Rudd-Melikian where he was engaged in design and development work. A graduate engineer of Villanova university, he has also been associated with Philco Corp.

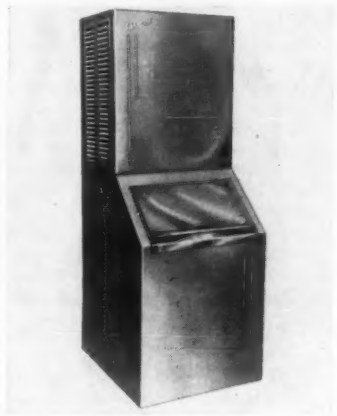
What Was New

At The National Restaurant Show

Products shown on this page are among the many new items that were exhibited at the recent National Restaurant Show held in Chicago.



NEW "SCOTSMAN" Model DC-3 super cuber ice machine makes up to 50 lbs. (1,200 cubes) of ice daily, yet occupies only 3 sq. ft. of floor space. It will store 35 lbs. of cubes. Scotsman, Queen Products Div., King-Seeley Corp., also introduced a model DF-4 super flaker that makes up to 100 lbs. of crushed ice daily.

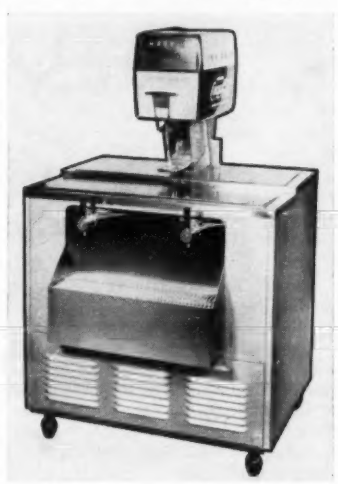


USING AUGUR style production system, new "Flake King" ice maker was shown by La Crosse Cooler Co. It makes 550 lbs. of ice every 24 hours. Available with 280-lb. (shown here) or 470-lb. storage bin.

A 150-LB. PER DAY CAPACITY automatic flaked ice machine for under-counter application was exhibited by Ross Temp, Inc. Flakes are collected in stainless steel storage bin of 60-lb. capacity.

IMPROVED "CHIPMASTER" which delivers up to 26% more ice per day was bowed by Carrier Corp. Improved performance was obtained by increasing compressor to 1-hp. size and use of larger tubes in condenser of water-cooled machines.

ADDING 6 IN. to the length of La Crosse dry storage bottle coolers has increased their capacities by six to 18 cases. This 78-in. model will hold 33 cases of 12-in. bottles corded, according to La Crosse Cooler Co.



FIVE-FLAVOR "DRINKMASTER" dispenser was shown by Council Mfg. Corp. Dual faucets in front provide four drink flavors as well as plain ice water and club soda. Island type dispenser head provides fifth flavor drink.

COMBINATION ICE STORAGE dispenser, water station, and beverage dispenser with top-mounted flake-ice machine was exhibited by Flake Ice Machines, Inc., division of Helmco-Lacy. Unit is 46 in. high, 18 in. deep, and 20 in. wide. It will produce 96 lbs. of flake ice a day.

UP TO 720 LBS. PER DAY of cold, dry ice flakes are provided by the "Penguin" model instant-ice machine displayed by Liquid Freeze Corp. Ice is produced on stationary, stainless steel drum. The self-contained air-cooled unit takes 30 by 30-in. space.

Trying to find the right man for a hard-to-fill vacancy—the NEWS' Classified Ads are read by your man.

Place your ad today!

EXPANSION VALVE FREEZE-UP?

. . . call on the genie in your bottle of

THAWZONE®

Many a "defective" expansion valve works perfectly again with the addition of a little *Thawzone* to the refrigerant.

This is one of the reasons why you should take it on *every* job and use it in *every* installation charged with the modern fluorine refrigerants (*Freon*®, *Genetron*®, etc.), or with methyl chloride, methylene chloride or isobutane.

For *Thawzone* contains a chemical genie that effects wonders in curing and preventing trouble in refrigeration and air conditioning systems. It's easy to use, economical: ⅛ ounce treats a pound of refrigerant.

- eliminates freeze-ups
- minimizes corrosion and copper plating
- helps keep expansion valve free of sludge and rust
- destroys trouble-causing moisture
- scavenges out oxygen

®Reg. Trade Names: Du Pont & Kinetic Chemical Corp.

Ask your refrigeration wholesaler today for Thawzone and the free Thawzone Service Manual.

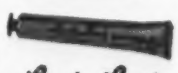
THAWZONE®

HIGHSIDE CHEMICALS INCORPORATED
18 Colfax Avenue • Clifton, New Jersey

TWO OTHER AIDS FOR BETTER REFRIGERATION SERVICE

TRACE

—the simple, fast way to pinpoint refrigerant leaks . . . a positive leak tag.



Leak Lock

—the joint sealer engineered for refrigeration use.

OVER THE COUNTER OR THRU THE MAIL

There are six well-stocked Harry Alter warehouses located for your convenient pick up. Mail orders are shipped the same day as received, to *anywhere* in the world. Phone or write us and you'll usually have it the next day. We are nearby to nearly everyone, with everything they need.

We're Real Specialists in

REFRIGERATION • AIR CONDITIONING • ELECTRIC MOTORS

SUPPLIES and PARTS

SAVE MONEY, time and effort by ordering from our new *Dependabook*, the most complete catalog of all. 232 pages. Over 10,000 items carried in stock. *Wholesale only.* Your orders filled really fast by mail, or they can be picked up at one of our six big warehouses.

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FREE PARKING AND FAST COUNTER SERVICE AT THESE 4 BIG WAREHOUSES

New Cleveland Contracting Firm Formed

CLEVELAND—Formation of a Cleveland company in the fields of heating, plumbing, air conditioning, and fire protection, was announced recently.

The new firm, known as the Reliance Co., has Sam H. Givelber as chairman of the board; Hyman R. Weiner as president and chief executive officer; William F. D. Neiheiser as vice president; Fred Gevelber as secretary-treasurer; and Joseph Levin as chief engineer and assistant secretary.

The company is located at 4975 Hamilton Ave. Work was under way to renovate and occupy 24,000 sq. ft. in existing buildings for offices and shops, which will include overhead power cranes, prefabricated welding shop, docks for large semi-trailers, and other modern equipment which, the company said, will enable it to handle any size job.

Joining in the new company were two men who have had 30 years' experience in this field in Cleveland under the name of Reliance Heating & Air Condition Co., and two former executive officers of a prominent local company.

Weiner, as treasurer and chief engineer of the latter company for 11 years, and Neiheiser, as manager of its air conditioning department for the last nine years, has been directly responsible for several recent major installations, it was indicated.

The former Reliance Heating & Air Conditioning Co., established in 1933 by Sam Givelber, has installed all types of heating plumbing, air conditioning, process and chemical pipe, and fire-protection systems in office buildings, industrial plants, and department stores throughout Greater Cleveland, according to the announcement.

U. of M. Research To Cover Rapidly Moving Vehicles

NEW YORK CITY—Air conditioning of rapidly-moving vehicles is one of the research projects that will receive particular attention from the University of Michigan's automotive research facilities in the College of Engineering, it was reported here.

The projects will be studied with the aid of a mobile automotive laboratory. Specially-designed for on-the-road studies of every aspect of motor vehicle performance, the laboratory was presented as a gift from the International Nickel Co. to the U. of M.'s engineering college.

The laboratory was conceived by Prof. William H. Graves, head of the university's automotive engineering lab.

Labor-Management Board Members Named In Phoenix, Ariz.

PHOENIX, Ariz. — Members of the Associated Plumbing, Heating & Piping Contractors of Arizona heard reports of the industry's state-wide program during business sessions of their annual convention at the Arizona Manor hotel.

Leonard Nally, Tucson plumbing contractor, was named chairman of the board of the Pipe Trades Industry Program of Arizona, composed of plumbing, heating, and air conditioning contractors, and labor groups in the state.

Representing management on the board are Bob Bayless, Norman Brooks, and Bud Baugh of Phoenix; David McDaniel and Charles Fassler, Tucson, along with Nally.

Representing labor are Ray Sanders, Jim Witt, and Arthur Hatton of Phoenix; and Robert Arnold, Paul Powell, and Ozzie Wheeler of Tucson.

Public member of the board is George Marx, of the state department of health.

California Cities Must Require State License Before Giving Building Permit

SACRAMENTO, Calif. — The governor of California has signed a bill requiring each city to require that every contractor receiving a building permit be duly licensed under the contractors state license law, reports the Refrigeration & Air Conditioning Contractors Association of Southern California, Inc.

The bill was favored by RACCASC. It was also backed by the Construction Industry Legislative Council, of which RACCASC is a member.

Other bills being considered by the state assembly that are backed by the legislative council to "strengthen the responsibility of contractors in the construction industry in this state" are:

AB 600 which calls for disciplining the individual license holder as well as the firm management when the construction firm is convicted of fraud or diversion of funds. In the past, RACCA notes, the licensed managing employe or officer has been able to defend himself by testifying that he did not know of the action nor took part in it.

AB 177 which will require an accounting for funds received under a construction contract where such contractor has not paid his subcontractor or material men. This is expected to assist subcontractors and material men in collecting amounts due them.

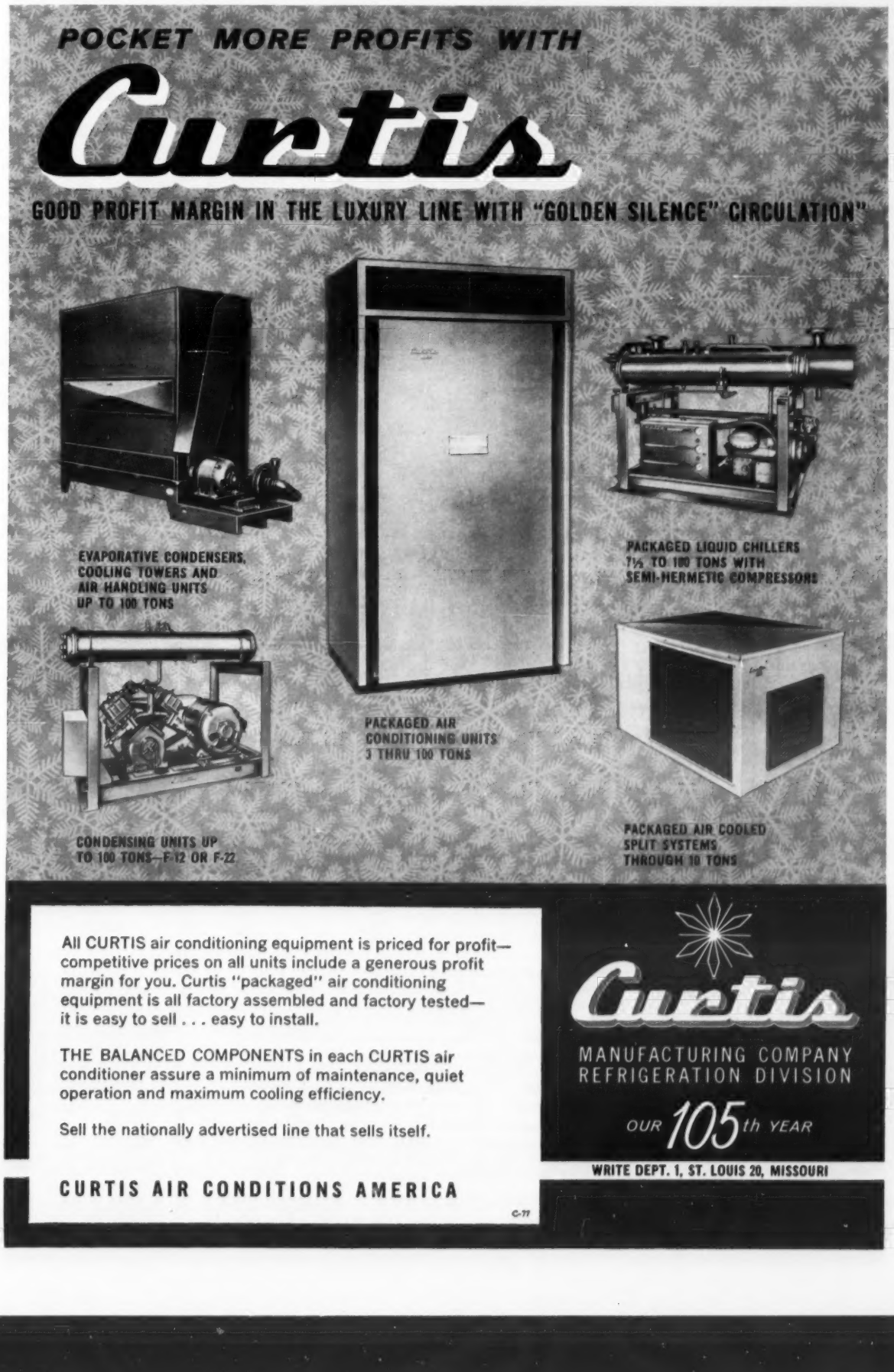
AB 179 which is designed to prevent excuses by the contractor for failing to show his books and records to the registrar when ordered to do so, on the ground that the records are with his auditor or attorney.

Recold Representative In Florida Expands

LOS ANGELES—Charles W. Hanson, manufacturers' representative for Recold refrigeration and air conditioning products and other lines in Florida, has been joined by Ralph H. Stebbings to form Hanson & Stebbings Co., it was announced.

The new company's office is at Kendall Plaza, Miami 56, Fla.

Both Hanson and Stebbings are registered engineers. Other major equipment lines handled by the firm include General Blower Co., Morrison Products, Inc., National Controls, Inc., and Ammerman Co., Inc.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Overhead Revolving Heaters Blowing Down Eliminate Stagnation, Prove Economical

LINDEN, N. J.—Heating and ventilating the Island Garden at West Hempstead, L. I., N. Y. presented unique problems, according to L. J. Wing Mfg. Co. here.

The huge structure, enclosing a total of 67,500 sq. ft. of floor space, is said to be the largest laminated wooden arch building in the world. Similar in shape to the Quonset hut of World War II, the structure rises from the ground at each side to a height of 66 ft. at the apex of the arch.

SUSPENDED revolving heaters are used in Island Garden at West Hempstead, L. I., N. Y. Inset shows closeup of Wing heater.

Many kinds of events take place in the Arena, from religious revival meetings to Wild West rodeos and circuses. Attendance at the various events ranges from a high of 10,000 to a low of 5,000 for large Arena events.

Concealed piping in the floor of the building will permit scheduling of ice sports events.

Overhead revolving heaters made by the Wing company were chosen to heat the building because only four are required, the firm said.

"The fact that the heaters blow the heated air down in constantly moving streams, makes it possible to cover 67,000 sq. ft. without subjecting any section of the floor to a concentrated blast of hot air," it was stated. "Heating is economical because heated air does not stagnate under the roof but is recirculated through the revolving heaters."

The Wing heaters are suspended from the laminated wooden arches 40 ft. from the floor. Steam at 5 p.s.i. is piped to the heating elements in 4-in. diameter lines. A 2-speed motor driven fan blows air from above the unit down through the heating element and through the two revolving discharge outlets.

Each heater is individually controlled from the floor. Several hours before the Arena is to be occupied, the heaters are run at half speed which is sufficient to maintain a comfortable temperature.

The motor speeds are controlled manually. In addition, a thermostat shuts off the heaters at the temperature that is wanted.

Each heater delivers about 19,500 c.f.m. Steam is furnished from a packaged boiler through a 5-in. supply main and a 3-in. return main. Each heater is equipped with stop valves, a trap, and a dirt pocket.

The entrance lobby to the Arena is heated by a combination of fixed Wing heaters and Anemostat diffusers. Steam is piped to the heating element which is secured above the hung ceiling of the lobby. A motor driven fan blows air through the heating element and through the diffuser which distributes the warm air evenly through the lobby.

The air in the lobby circulates down from the diffuser over to the entrance doors and up through return air grilles to the space between the roof and the hung ceiling. It is then recirculated through the heater. In warm weather the heaters are used as ventilators with the steam off.

Public Wants Heating To Be Automatic, Compact, PHCIB Says Figures Indicate

CHICAGO—The strong public preference for automatic heating and the trend toward compactness in heating equipment are the dominant factors in the heating picture today, says the Plumbing-Heating-Cooling Information Bureau.

Exactly 94.7% of boilers sold during the first nine months of 1958 were automatically fired as compared with 28.9% in 1945.

Quoting figures released by the Institute of Boiler & Radiator Manufacturers, the bureau points out the steady swing to automatic heating in recent years.

In 1946, the percentage of automatically fired boilers was 45.1%; in 1947, 57.4%; in 1949, 67.3%; in 1951, 78.9%; and in 1953, 93.2%.

Changing trends in home construction are reflected in the boiler industry, the bureau says. Because houses are smaller and well insulated, boiler manufacturers have been able to reduce both the size and weight of boilers.

In 1945, the average weight of cast iron boilers was 1,620, by 1949 it had decreased to 1,412 lbs., in 1953 it was 1,075 lbs., and for the first nine months of 1959 it had decreased to 983 lbs.

"These figures," the bureau explains, "point up the trend toward smaller and more compact boilers.

Coincident with the shrinkage in size, there has been a steady improvement in the over-all efficiency of equipment for automatic heating, including boilers, burners, controls, circulators, boiler water level controls, and other accessories.

"Parallel to the trend toward compactness in boilers, heating and piping contractors have been able to reduce the diameter of the piping by utilizing forced circulation of hot water. Similarly the size of heat distributors has been reduced by the use of high temperature water.

"The effect has been to lower the cost of the hydronic heating installation while at the same time providing greater responsiveness and comfort."

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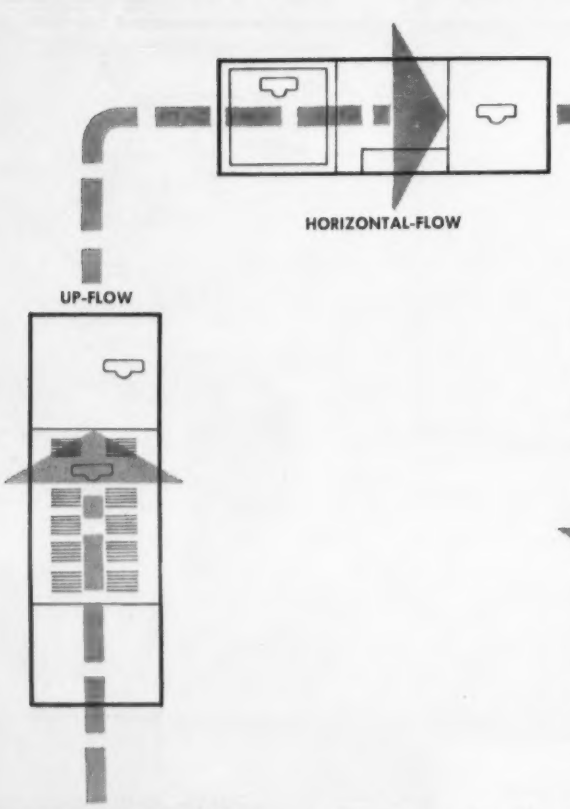

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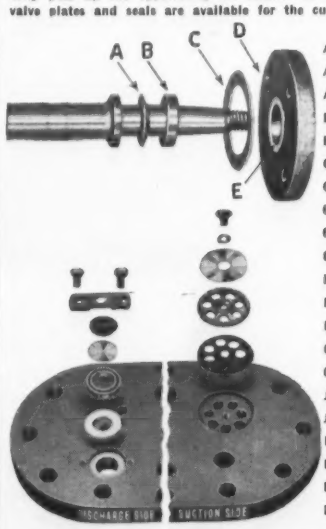

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Now Representing...

Arkla Air Conditioning Corp.—CHARLEY LOCKHART, president and general manager of Southwest Distributors, Inc. of Dallas, has been appointed associate for water chiller equipment in Texas. His primary responsibility will be the development of Texas distribution and markets for the "Arkla-Servel" line of 25-ton steam-operated water chillers.

York Div., Borg-Warner Corp.—HENZEL-POWERS, INC., Albany, N. Y., has been named distributor for room air conditioners.

Amana Refrigeration, Inc.—TRYMAN DISTRIBUTORS, INC. of Milwaukee has been appointed distributor in 42 Wisconsin counties and 15 counties in Upper Michigan.

Gibson Refrigerator Co., Div. of Hupp Corp.—BROWN SUPPLY CO. of St. Louis has been appointed distributor for 42 counties in the eastern half of Missouri and 37 counties in the southern half of Illinois.

INTERSTATE ELECTRIC CO., New Orleans, has been named distributor of white goods in Louisiana and 15 counties in Mississippi. HICKS DISTRIBUTING CO., INC., also of New Orleans, will handle room air conditioners and dehumidifiers in the same area.

Marlo Coil Co.—The manufacturers' representative firm of STERLING & NEWBY has been appointed sales agent for air conditioning and heat transfer products in the Dallas area. The firm also represents Marlo in Houston. Ira P. Newby heads the Dallas office, Albert A. Sterling, Jr. the Houston office.

McQuay, Inc.—New sales representatives for heating and air conditioning products are CAMPBELL & BECKER, INC., Albany, N. Y.; THE BACHMAN CO., Denver; LAMB ENGINEERING CO., Baltimore, Md.; GEORGE BREITENBACH, Bala-Cynwyd (Philadelphia), Pa.; and RICHARD K. PECK, JR., Tampa, Fla.

Pol-Air, Inc. (Morgan City, La.)—POL-AIR DISTRIBUTING CO., Dallas, was formed recently as area distributor for the Pol-Air "Strata Freeze" under-dash refrigerator for automobiles. Jan Ward is manager.

Mueller Climatrol, Div. of Worthington Corp.—GEORGE E. BAGWELL CO. has been appointed distributor in the Montgomery, Ala. area for heating and air conditioning equipment.

A. M. Byers Co.—SOUTHLAND SUPPLY CO., Dallas, and W. M. PATTISON SUPPLY CO., Cleveland, have been named distributors of polyvinyl chloride (plastic) pipe.

Remington Corp.—JENKINSON & CO. of Toronto has been named Ontario distributor of room air conditioners.

Alpha Plastics, Inc, Inc.—SALES SERVICE CORP., Sarasota, Fla., has been named sales representative for rigid polyvinyl chloride pipe, fittings, and valves in North and South Carolina, Georgia, Alabama, Florida, Mississippi, Tennessee, and Louisiana.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Electric Utilities Sponsor Heating, Cooling Class for Contractors In Conn.

BERLIN, Conn.—Almost 200 heating contractors from all parts of Connecticut attended a class on electric warm air heating and air conditioning held in the auditorium at the general headquarters of The Connecticut Light & Power Co. here.

The discussion covered the design of heating and air conditioning systems to provide maximum comfort, it was reported. In addition to the advantages of electric heating, one of which is a thermostat in each room, they were advised to include the control of air circulation, temperature, humidity, and purification.

The speakers included Charles Byron, residential sales manager, CL&P, Berlin; Graham Jamison, industrial consultant for the Western Massachusetts Electric Co., Springfield; Emil Gross, industrial sales engineer, CL&P, Bristol, Conn.; and Mitchel Landau of Landau Associates, Middletown, Conn., representing the Thermo-Base Div. of Gerwin Industries, Michigan City, Ind.

After Byron's opening address, Landau explored the factors involved in maintaining indoor comfort. Physiological reactions of the human body to varying conditions of indoor environment were explained as the basic elements governing the design of an electric warm air heating and air conditioning system for the maintenance of comfort, rather than merely balancing the heat loss.

Jamison outlined the values of storm windows and insulation as it affects comfort and cost.

Gross discussed the requirements of the utility companies to assure proper electrical service for all electrical appliances and equipment.

The class was sponsored by The Connecticut Light & Power Co. and The Hartford Electric Light Co. in cooperation with a number of heating and air conditioning wholesalers.

Among the wholesalers actively encouraging attendance at this class were Max Landerman, Inc., Hartford, Conn.; Modern Equipment Corp., New Haven, Conn.; New Britain Plumbing Supply Co., New Britain, Conn.; and Gray Supply Co., and Cellite Engineers, Springfield, Mass.

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...the air-cooled refrigerant condenser that eliminates fans, cooling towers, noise and maintenance.

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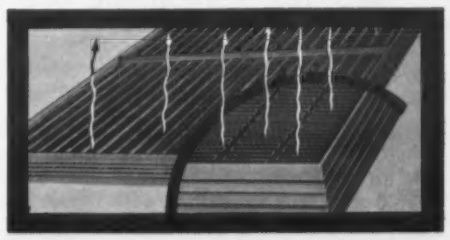
The size of the condenser is virtually unlimited: you just assemble single AIRVEC elements in a single plane until the required area is covered. Initial installation costs are lower, too. And AIRVEC is so light that little or no special rigging is required.

Its low, unobtrusive silhouette blends easily with any architecture, leaving more useable space within the building proper. Roof loads are negligible so no extra beams are needed. Edwards AIRVEC Condensers are available in nominal sizes of 1.25, 2.50 and 3.75 tons and larger assemblies up to hundreds of tons.



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Air Condition Race Track Clubhouse

WILMINGTON, Del. — Delaware Park's gleaming new race track clubhouse at Wilmington, Del., is designed to provide racing fans with every personal comfort, including air conditioning.

From the uncomfortably warm days of early June to the torrid heat of late July, patrons will be able to relax and dine in one of the world's few air conditioned race track clubhouses.

The air conditioning system, built by Carrier Corp., furnishes the cooling effect of 200 tons of ice melting daily to all three clubhouse levels, it was pointed out.

Designed by Carrier's Philadelphia office, the system has as its center a hermetic centrifugal refrigeration machine. Tucked beneath the grandstand, this compact unit supplies chilled water to "Weathermaker" conditioning apparatus hidden in the first floor cafeteria and Turf Club, the 700-seat dining room on the clubhouse's second floor, and the 250-seat third floor lounge.

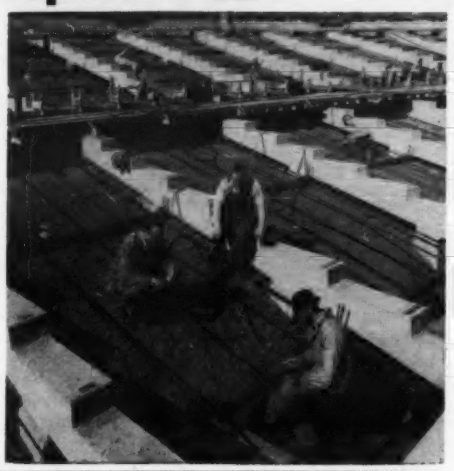
The air handling units use damper systems to mix outside air with return air, then pass the mixture through washable filters and across heating and cooling coils. Centrifugal fans send the conditioned air to the areas through ductwork and ceiling diffusers.

Radiant Heating To Be Feature of San Francisco Giants' New Stadium

SAN FRANCISCO — Baseball's San Francisco Giants will soon be playing in their new stadium—Candlestick Park—reportedly "the only heated, open air stadium in the world."

Giant officials say the first "Play Ball' will be shouted in the new ball park in September, 1959.

Because many of the Giants' National League games will be played at night—and it is quite cool in San Francisco during summer months—a radiant heating system is being installed in the 20,000-reserved-seat section. This heating system will also be used during football season.



HOT WATER will be circulated through these welded lengths of wrought iron pipe, which will be suspended beneath pre-cast concrete seats. The radiant heating system will warm the 20,000 - reserved - seat section in Candlestick Park, new home of the San Francisco Giants baseball team.

Eagleson Engineers, San Francisco, working with John S. Bolles, San Francisco architect, designed the heating system and specified more than 35,000 ft. of ¾-in. diameter 4-D wrought iron pipe. This is spaced on 18 to 48-in. centers and supported immediately below pre-cast concrete seats. Headers for the combination grid and coil-type system will be placed in the aisles.

Circulating water is heated by a package-type boiler, independent of the remainder of the stadium's heat plant.

Another package-type boiler will be used as the heating medium for automatically controlled tempered air ventilating systems which will serve the executive area, locker rooms, and concession areas. This boiler will also heat water used in the showers and kitchen.

Name for the new stadium—Candlestick Park—comes from Candlestick Cove; that part of the San Francisco Bay next to the new ball park, where the rocks "stick out like candles."

The $15 million ball park is said to be the first major league stadium to be built entirely of reinforced concrete.

Architect Bolles designed the stadium for comfort — wider aisles and seats, with a minimum number of columns.

A. M. Byers Co., Pittsburgh, producer of wrought iron products, furnished the corrosion-resistant 4-D wrought iron piping. General contractor is Charles Harney, Inc., San Francisco. Harry Lee Plumbing & Heating Co., Burlingame, Calif., plumbing and heat heating contractor, fabricated the heating coils.

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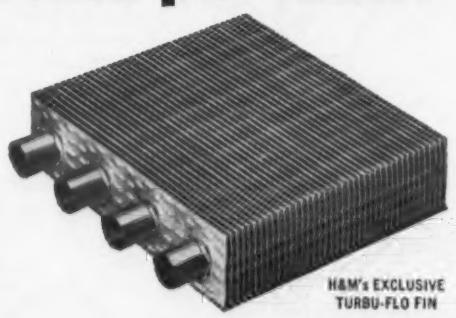
H&M makes coils for use with most refrigerants, steam (standard or non-freeze coils), hot or chilled water. All coils are available from 1 to 8 rows deep, with finned heights of 12 to 36 inches, and finned lengths up to 10 feet. Aluminum fins on seamless copper tubing are standard, though copper fins may be ordered. Casings come in heavy gauge galvanized steel or aluminum, with connections for left or right hand.

When perfect performance depends on correct design, specify H&M coils. Ask your wholesaler for complete information or write to Halstead & Mitchell, Bessemer Bldg., Pittsburgh 22, Pa.



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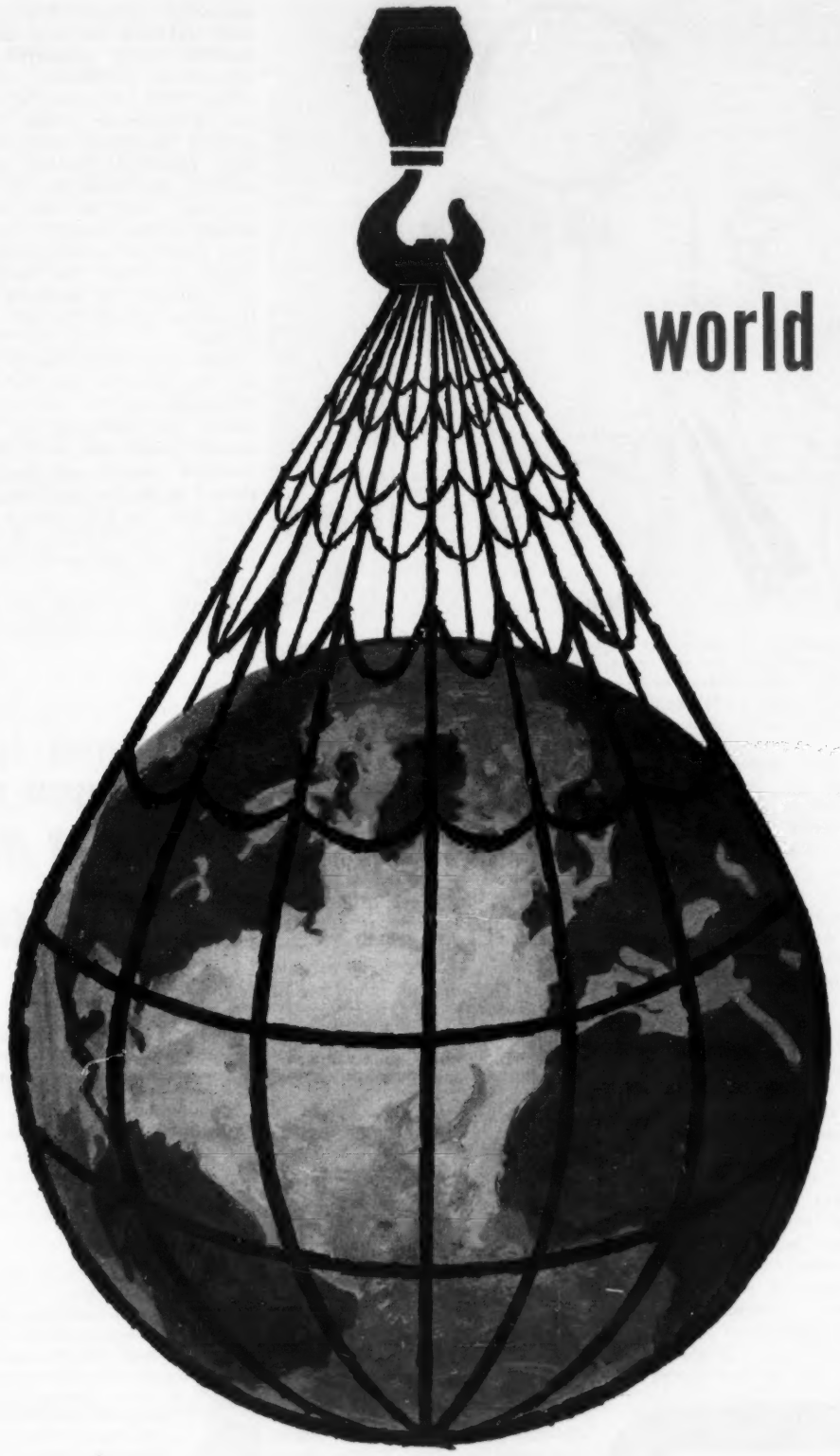

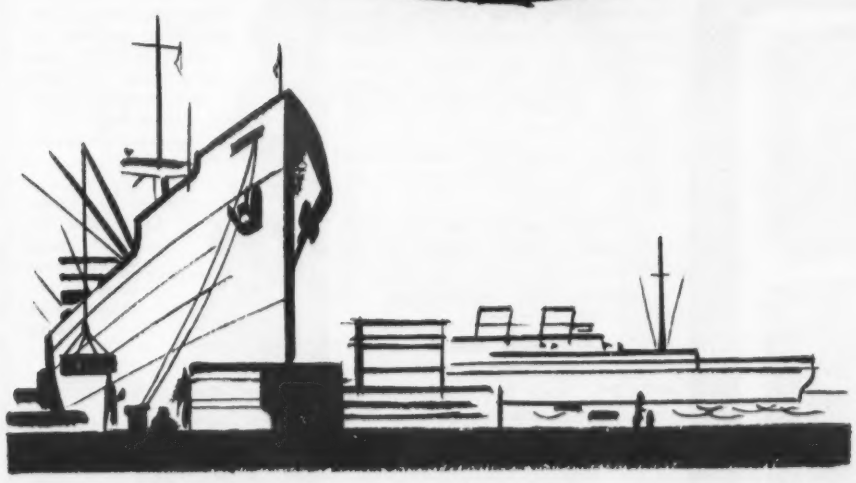

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TECHNICAL CENTER

By Frank J. Versagi, Technical Editor

Instruments In Service Work (1)

Introduction: Everyone agrees that the proper tool is half the job. Quite a few concur with Lincoln's philosophy "The time spent in sharpening the axe is saved in cutting the wood."

But where do instruments fit into this picture? There you'll get an argument.

So much of an argument that one survey showed some 85% of appliance repairmen do not use any meters or instruments at all in their field work—although some of these do use instruments in their shops.

The primary function of instruments is to indicate or measure—anything from quantity to rates of flow of heat, electricity, air, moisture. As diagnostic tools, instruments can detect what is wrong with a system, then provide continuing information on the effectiveness of any corrective service being applied.

As a very basic example, watching a high side gauge as the water supply is altered is one way in which instruments are practical and useful.

The heating-cooling installer/serviceman will use or encounter instruments at several levels or degrees of complexity:

On the job—the conventional pressure gauges and thermometer of the refrigeration man are examples of this direct use of instruments. Electrical testing meters would fall into this category.

In the shop—some instruments may be too delicate or too cumbersome for practical use on the job, but are invaluable for diagnosis and service in the shop. Multiple-meter electronic instruments, some types of calibrating temperature and pressure testers fall into this group. Recording instruments are conveniently used in the shop, but are quite useful in the field on occasion.

Many instruments designed for laboratory applications find practical use in the service shop, where they can be given the care required to keep them operative and accurate.

At the specialist's place of business — electrical and electronic contractors and distributors, controls people, air handling experts, utility personnel are examples of people who frequently have specialized instruments which are pertinent to the work being done by the heating-cooling serviceman. Knowing of the existence of such instruments can often mean considerable savings for the serviceman.

Potentiometric recording instruments, as an instance, can be used for checking and calibrating thermocouples and electrical meters.

In this series of articles, the NEWS will describe the basic function of assorted instruments which find application at some level of heating-cooling service. The series will cover instruments for indicating or recording temperature — pressure and vacuum — electrical units — humidity — air — gases — flow rates—leaks.

Numbers in parentheses indicate typical listed suppliers of instruments for the functions being described. Prices are not included because of the diverse pricing structures and practices of the several companies.

Temperature measurements are fundamental to heating and cooling work. Yet there are many who are not aware of any other method to determine temperature than with a pocket, glass stem thermometer. Not that there is anything wrong with such a simple instrument. But the craftsman uses instruments at several levels of complexity, just as the writer uses words with shades of meaning—depending upon the specific end intended.

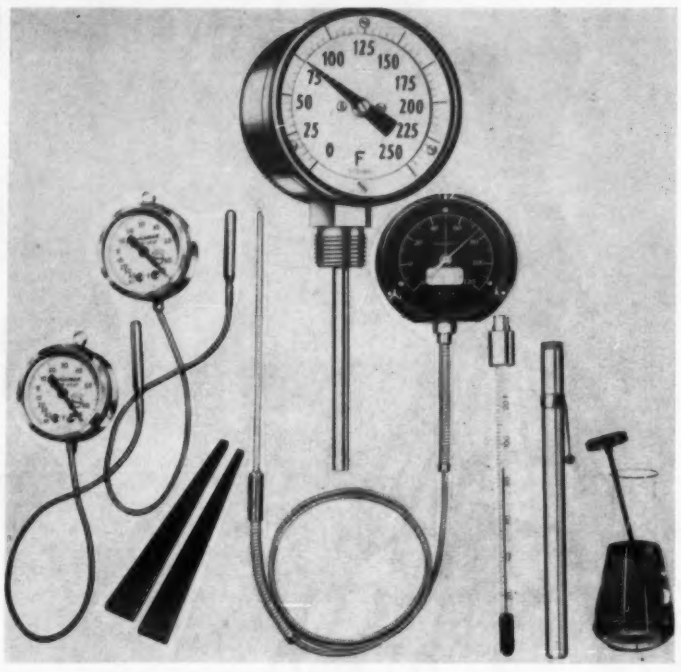

FIG. 1—Assortment of temperature measuring devices indicates variety of methods in which thermometers may be applied. Twin dial thermometers at left are specially designed for superheat determination with two rubber insulating and wrapping strips provided; in center are typical dial and stem thermometers; at right are the very familiar pocket glass thermometer and a simple stem thermometer.

There are four common ways to measure temperature from the practical viewpoint. The pocket thermometer illustrates one method—that which depends upon the even expansion of a liquid, mercury, or colored alcohol to indicate changes in temperature.

The second method makes use of thermocouples—junctions of two unlike metals which generate an electrical current when exposed to temperature differentials. The generated e.m.f. is measured with suitable instruments which convert the reading directly to degrees Fahrenheit or Centigrade.

Resistance thermometers, the third method, are similar in application to thermocouples, but differ in basic operation. Thermistors, resistance bulbs, or whatever they may be called are essentially temperature sensing devices whose electrical resistance goes down as their temperatures rise. Unlike thermocouples, resistance sensing elements do not generate an e.m.f. Rather, they allow more or less current to pass from an external power source, and the change in resistivity is measured by a meter or null balance type dial.

A fourth method of temperature measurement makes use of the measured and reproducible expansion and contraction of bi-metallic elements.

Thermocouples, resistance elements, and bi-metallic elements can be used for temperature control systems as well as for simple measurement.

The commonly used glass thermometer is versatile; it can be used to measure liquid temperatures, air or gas temperatures, and the temperature of solids—as when it is strapped to the suction line during a superheat measurement. For practical purposes, it can operate wet or dry, can withstand extremely corrosive solutions and atmospheres.

When read in place, temperature measurements are accurate assuming proper contact is made between the stem and the medium being measured. Refrigeration servicemen are familiar with the need to attach the thermometer **firmly** to the suction line when taking superheat readings. Indeed, special clamps are available for this purpose. Not so well known among service people is the fact that there are usually prescribed depths to which the thermometer should be submerged in liquids or exposed to air—as in a duct.

Most instruction sheets point out, for example, that for liquid measurements the thermometer should be immersed so many inches; when used in a duct, a specified length of the stem should be in the air flow. Dipping just the bulb into a glass of water does not give the same reading as immersing to the prescribed length.

Another frequently overlooked point in the application of

Use DEFLECT-O for add-on cooling jobs . . .

- When cooling is added to a warm air heating system, and the wall registers need not be replaced, that's where to use DEFLECT-O!
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Open type Starter Bulletin 709. Size 2 shown.

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COMPARATIVE TESTS PROVE PRECISION TUBE TOPS 'EM ALL IN QUALITY

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Precision Tubing consistently is unequalled and unsurpassed in comparative quality tests of accuracy, temper, straightness and roundness. With Precision you are always sure of extra quality at no extra cost—sells at regular mill prices. Available in sizes from .010" to 1.000" O.D. in copper, brass, aluminum, nickel and nickel alloys, Ni-Span "C", phosphor bronze and nickel silver. Accurately drawn seamless capillary tubing in straight random lengths or coils.

Write for folder "Small Tubing For Industry" to Dept. 5, Precision Tube Company, Inc., North Wales, Penna.

PRECISION TUBE COMPANY

the simple glass thermometer is that of shielding the instrument from radiated heat. Heating people often measure the air temperature in the furnace bonnet, but place the thermometer in a position where it receives direct radiation from the heat exchanger surfaces — causing erroneous readings.

On larger, field engineered systems, where frequent temperatur ereadings will be made in piping or pressurized vessels, thermometer test wells may be permanently installed. In such cases, the thermometer is merely inserted into the well, assuring proper contact with the medium being measured, through the walls of the test well.

Disadvantages of Glass Thermometers

One disadvantage of the glass thermometer is its fragility. Another is its relatively slow response in some applications— as in checking case temperatures of supermarket display fixtures when doing corrective service work or checking temperature drop across an air conditioning coil.

Perhaps the greatest disadvantage of the glass thermometer is that it is very often not read in place. It is removed from the outlet grille of a packaged air conditioner, for example, carried to eye level in the room ambient, and read a few seconds to a minute after having been removed from the actual medium it was measuring.

Similarly, in measuring a liquid bath temperature, the thermometer is lowered into the bath, left for a few minutes, then raised out of the bath to be read.

A basic rule: read glass thermometers while they are actually in contact with the medium being measured. If they must be handled, make as little physical contact as possible with the hand, and read immediately.

A recurring problem with mercury filled glass thermometers is separation of the mercury column resulting in what is frequently termed a "split thermometer." The cause of the column's splitting is almost always rough handling, and such handling cannot practically be avoided at times in service work. (Splitting does not occur in thermometers which do not have a gas atmosphere over the mercury, but such thermometers allow the mercury to move back and forth by gravity as well as temperature change and may not be used in other than essentially vertical positions.)

With most service thermometers, the mercury reservoir is at the bottom of the tube. In this case, cool the thermometer bulb in shaved ice so as to draw the mercury to the lower part of the reservoir. Add more ice or salt to lower the temperature if necessary to accomplish this. With the thermometer in an upright position, tap the bottom of the bulb on a padded piece of paper or cloth. The entrapped gas causing the split column should then rise to the top of the mercury. After the column has been joined, it is a good idea to test the service thermometer against a standard thermometer at several service temperatures.

Dial thermometers overcome a couple of the disadvantages of glass instruments. Actuated by bi-metallic coils, mercury, vapor pressure, or gas, dial thermometers are available in varied forms which allow the dial to be read while the sensing element may be in any position and a distance from the dial.

Simplest type dial thermometer is the straight stem shown measuring liquid temperature at far right of Fig. 1. With the stem immersed 2 in. in liquids and 4 in. in gases or air, this thermometer gives reasonably accurate readings and can be obtained for application in temperature ranges pertinent to heating, cooling, refrigeration work. Some of these stem thermometers will fit into thermometer wells designed for glass thermometers.

Specially designed dial instruments may be used for specific applications like superheat determination. Thus the twin units at far left of Fig. 1 are supplied with rubber strips for insulating the sensing bulbs while the necessary two readings are taken simultaneously. Some have auxiliary indicators which indicate maximum or minimum past readings along with present reading.

Because of the multiple uses to which dial and stem thermometers may be put, no one of them is as universally applicable as the simple glass thermometer. Thus, in ordering dial thermometers, it is necessary to specify joint types, scale range, stem length, whether to be used in liquid or air, if liquid, what kind, etc.

Uses for dial or stem type instruments are many. A few which come to mind: measuring maximum and present temperature of foodstuffs in transit; taking temperature in several locations of cold room; determining air temperatures in hard to reach ducts; reading temperatures outside a frozen food chest without opening the chest and removing the thermometer.

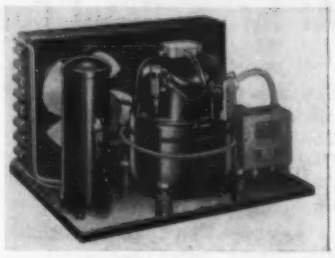
Typical suppliers of temperature measuring devices: (3), (5), (7), (9), (12), (17), (18), (19), (20), (22), (23), (24), (25), (27), (30), (31), (32), (33), (37).

Instrument Suppliers

1. Anemostat Corp. of America, 10 E. 39th St., New York 16, N. Y.
2. Associated Research, Inc., 3758 W. Belmont Ave., Chicago 18, Ill.
3. Bacharach Industrial Instruments Co., 200 N. Braddock Ave., Pittsburgh 8, Pa.
4. Bailey Meter, 1050 Ivanhoe Rd., Cleveland 10, Ohio.
5. Barber-Colman Co., 1700 Rock St., Rockford, Ill.
6. B-I-F Industries, Inc., 345 Harris Ave., Providence 1, R. I.
7. Bristol Co., P.O. Box 1790 ACR, Waterbury 20, Conn.
8. F. W. Dwyer, P.O. Box 373, Michigan City, Ind.
9. Electric Auto-Lite Co., P.O. Box 931, Toledo 1, Ohio.
10. Ellison Draft Gage Co., Inc., 548 W. Monroe St., Chicago 6, Ill.
11. Fisher Research Laboratory, Inc., 1961 University Ave., Palo Alto, Calif.
12. Friez Instrument Div., 1400 Taylor Ave., Towson 4, Md.
13. General Electric Co., Apparatus Sales Div., 1 River Rd., Schenectady 5, N. Y.
14. Hastings - Raydist, Newcomb Ave., Hampton, Va.
15. Heights Air Conditioning Co., 3607 Hildana Rd., Cleveland 20, Ohio.
16. Imperial Brass Mfg. Co., 6300 W. Howard St., Chicago 48, Ill.
17. Industrial Development Laboratories, 982 River Rd., Edgewater, N. J.
18. Leeds & Northrup Co., 4907 Stenton Ave., Philadelphia 44, Pa.
19. Manning, Maxwell, Moore (American), 250 E. Main St., Stratford, Conn.
20. Marsh Instruments Co., 3501 Howard St., Skokie, Ill.
21. Meriam Instrument Co., 10920 Madison Ave., Cleveland 2, Ohio.
22. Minneapolis-Honeywell Regulator Co., Industrial Div., 2753 Fourth Ave., S., Minneapolis 8, Minn.
23. Moeller Instrument Co., 132nd St. & 89th Ave., Richmond Hill 18, N. Y.
24. Pacific Transducer Corp., 11836 W. Pico Blvd., Los Angeles 64, Calif.
25. Palmer Thermometers, Inc., 2501 Norwood Ave., Box 125, Cincinnati 12, Ohio.
26. Parks-Cramer Co., Newport St., Fitchburg, Mass.
27. Partlow Corp., 2 Champion Rd., New Hartford, N. Y.
28. Powers Regulator Co., 3400 Oakton St., Skokie 78, Ill.
29. Pyramid Instrument Corp., 630 Merrick Rd., Lynbrook, N. Y.
30. Rochester Mfg. Co., 100 Rockwood St., Rochester 10, N. Y.
31. Serdex, Inc., 12 Bowdoin Sq., Boston 14, Mass.
32. Simpson Electric Co., 5200 W. Kinzie St., Chicago 44, Ill.
33. Tittle & Kift, 1823 N. Monitor, Chicago 39, Ill.
34. United States Gauge Div., American Machine & Metals, Inc., Sellersville, Pa.
35. Victory Engineering Corp., 500 Springfield Rd., Union, N. J.
36. Wallace & Tiernan, 25 Main St., Belleville 9, N. J.
37. Weksler Instruments Corp., 195 E. Merrick Rd., Freeport, L. I., N. Y.

NEXT: Temperature Measurement by Thermocouple, Thermistor.

Tecumseh Bows New Low Temp Units



TECUMSEH low-temp unit.

TECUMSEH, Mich. — Tecumseh Products Co. has announced the addition of new 2 and 3-hp. low temperature commercial condensing units.

Models FD200LT and FE300-LT are air cooled and models WFD200LT and WFE300LT are water cooled. All are offered for either single or three phase and are charged with Refrigerant-12.

These units incorporate standard four-cylinder external mount compressors with the same basic design as the 4 and 5-hp. air conditioning compressors, it was pointed out. All have direct suction cooling, a large oil supply, and Rotolock valves. The water-cooled units are also equipped with auxiliary fans.

"The 2-hp. air-cooled unit at -10° F. ASHRAE conditions delivers 9,700 B.t.u. and the 3-hp., 14,000," the company said. "Water-cooled units at -10° F. ASHRAE deliver 11,190 B.t.u. and 15,280 B.t.u., respectively.

"The addition of these units allows Tecumseh to offer high, medium, and low temperature air or water-cooled commercial units from ½ to 3 hp. These units round out a line of over 150 hermetic compressors and units for commercial use."

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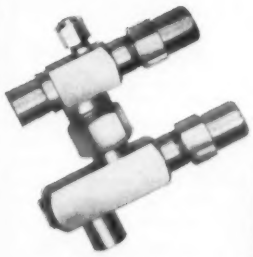
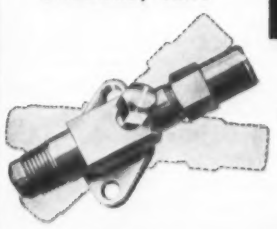
REFRIGERATION VALVES



Break-Away Valve



Swivel Pad Valve

Rotalock Valve

Primore leads the industry with a full line of Steel Shut Off Valves.

Over *15 years* Research, Designing and Manufacturing experience of *top quality* Steel Valves.

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IMPROVED 30 MODEL, 1,000 THRU

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30,000 CFM, H- AND V-SERIES

STATION AIR CON-

ARE MODULAR CONSTRUCTED

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HAVE INSIDE MOTOR MOUNTING

HORIZONTAL MODEL

THE BEST OF PROVED-BEST FEATURES 'N SOME NEW ONES, TOO: SECTIONALIZED CONSTRUCTION. FULL ACCESS TO ALL EXPOSED AREAS. FRAME, STRUCTURAL STEEL ANGLES, WELDED FOR RIGIDITY. FAN SECTION MAY BE FIELD-ROTATED. FANS, FORWARD CURVE, DIDW, CAST IRON CENTER HUB. EXTRA DEEP COIL SECTION CAN ACCOMMODATE 10-ROW COILS. DRAIN CONNECTIONS BOTH ENDS. INSULATED DRAIN PAN INDEPENDENT OF UNIT. SELF-ALIGNING, LIFETIME LUBRICATED BEARINGS. HIGH, LOW VELOCITY FILTERS. SEND FOR TIME-SAVER "FAN PERFORMANCE CURVES."

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Release Topics of Papers To Be Offered At International Congress Aug. 19-26

COPENHAGEN, Denmark — Subjects of many papers to be presented at the 10th International Congress of Refrigeration, which will convene here Aug. 19-26, were released recently by Congress officials.

They reported that more than 270 papers have been received by the nine commissions of the Congress, which will study and discuss them during the week-long sessions.

Of particular interest, Congress officials believe, will be a series of lectures of the Peltier effect with contributions from the United States and the U.S.S.R. Papers on air conditioning and heat pumps have been received from many countries. Compressor valves are the subject of several papers.

Information on the Congress and details of interest to those who would like to attend appeared on page 46 of the May 18 issue of the NEWS.

In addition to presentation and discussion of papers, the Congress will show films of technical interest; exhibit scale models of modern refrigerated ships, railway cars, and trucks; and exhibit examples of good teaching aids.

A representative sampling of papers to be presented, with author and country of origin follows. All will be presented in English and French.

Graphic method for determination of vapor pressure within a wall of a cold store and the mass rate of water vapor diffusing through walls consisting of several layers—H. Glaser, Germany.

On the influence of free convection in insulated vertical walls. G. Lorentzen and E. Bren-deng, Norway.

Influence of capillary suction effect on infiltration of moisture in sheet insulations of asphalt impregnated paper — Matts Baeckstroem, Sweden.

Investigation of the controlling effect of surface variables on the rate of cooling of a solid body—Carl F. Kayan, U.S.A.

Dimensionless groups in thermodynamics — P. Plank, Germany.

Measurement of dynamic performance of automatic compressor valves—G. Lorentzen and O. Flognfeldt Johansen, Norway.

The Peltier effect contra the conventional refrigerating process—M. Baeckstroem, Sweden.

New techniques in the gas storage of fruit—C. A. Faves, Canada.

Experimental freezing and storage of chilled and unchilled meat—Jan Szeluto, Poland.

Investigation and application of freeze drying of foods—G. B. Tchigeov, U.S.S.R.

Radiating chill room for pork and beef—A. Korsgaard and H. C. Larsen, Denmark.

Influence of chlorotetracyclin hydrochloride and alkaline polyphosphates in poultry refrigeration and cold storage — M. Estada Girauta, V. Jimenez, and R. P. Fernandez, Spain.

Design and performance of uninsulated freezer room in the rock—G. Lorentzen, Norway.

Operation of mechanically refrigerated railway trains in the U.S.S.R. — Sh N. Kobulashvili, M. S. Martinov, and M. M. Shapovalenko, U.S.S.R.

General review of the teaching of refrigeration for the middle and low level in Western Germany and the equipment of a refrigeration laboratory for this purpose at the Staatestechnikum Karlsruhe—Valerius Fuener, Germany.

Name 6 U. S. Delegates To Attend International Congress In Denmark

WASHINGTON, D. C. — Dr. Detlev W. Bronk, president of the National Academy of Sciences — National Research Council, announced recently the appointment of six delegates to the 10th International Congress of the International Institute of Refrigeration (IIR) meeting in Copenhagen, Denmark, Aug. 19-26.

The delegates, all members of the U. S. National Committee for the IIR, are:

Dr. R. C. Jordan, head, Dept. of Mechanical Engineering, University of Minnesota; J. E. Dube, president, Alco Valve Co.; W. T. Pentzer, chief, Biological Sciences Branch, Marketing Research Div., Agricultural Marketing Service, U. S. Dept. of Agriculture; Dr. F. G. Brickwedde, dean, College of Chemistry and Physics, Pennsylvania State university; Dr. C. F. Kayan, executive officer, Mechanical Engineering Dept., Columbia university; and B. H. Jennings, director, Research Laboratory, American Society of Heating, Refrigerating & Air-Conditioning Engineers.

The membership of the U. S. National Committee, consisting of 20 individuals selected from academic, governmental, and industrial institutions, is appointed by the president of the National Academy of Sciences to effect participation for the Academy as a "national member" of the International Institute of Refrigeration.

The chairman of the U. S. National Committee is Dr. Jordan. Dube is the vice chairman and Pentzer is the secretary.

"U. S. National Committee participation on the nine commissions of the institute provides an insight into the voice in the international developments relating to such fields as very-low-temperature physics; heat transfer and thermal insulation; refrigeration machinery; applications of refrigeration to foodstuffs and industrial processes; low temperature biology; and refrigerated transport in ships, refrigerator cars, trucks, trailers, and airplanes," the announcement said.

"At the present time U. S. members of the IIR hold a vice presidency of the technical board and six vice presidencies of commissions, two positions as secretary, and approximately 40 memberships on the nine commissions.

"It is significant that the U. S. National Committee for the IIR receives its financial support through contributions from industry, associations, and individuals who feel that this international activity is of benefit both to the United States and the entire world."

A typical example of the activities in the IIR is demonstrated by the work in Commission IV. U. S. members on that commission have been assisting in the development of commission recommendations on acceptable storage temperatures for foods of all kinds.

"These recommendations may provide a basis for international agreement on temperature requirements that could affect food storage techniques and possibly influence legal decisions involving claims rising from storage and transportation losses," it was stated.

The International Institute of Refrigeration was founded in Paris in 1908. There are presently 35 countries in its membership; individuals may be as-

(Concluded on next page)

NONCORROSIVE FLOAT VALVE

Injection Molded of NYLON (Zytel 102X) with Stainless Steel (Type 304) valve parts. 1.5 GPM at 30 PSI. ¼" standard brass connection. Unique design. Shuts off with water pressure. Maintains constant water level, without adjustment, with water pressure varying from 10 to 200 PSI. Trouble-free solid Polyethylene floatball on stainless steel float rod. Try it.

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SERVICE HERMETIC UNITS
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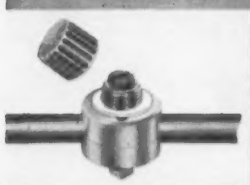
LINE TAP VALVE



U.S. PAT. NO. 2,827,913

A small compact valve that is easily attached on refrigerant lines and pierces the tubing to provide a permanent port for charging, discharging and testing, without refrigerant loss. Available for 6 O.D. tube sizes: 3/16", ¼" 5/16" 3/8" ½" 5/8" All sizes the same price.

CAN TAP VALVE

Screws on to most all packaged refrigerant containers and pierces can seal to release refrigerant. Exclusive 3 point sealing allows you to use as much refrigerant as is required with confidence that the balance will not leak from the can. Easily shut off and sealed. Needle is replaceable.

LINE PORT VALVE

U.S. PAT. NO. 2,824,756

Provides a service port for sealed units when it is desirable to cut the line that is to be tapped. Incorporates T-S connection which permits a variety of installations whereby one end may be flared, the other soldered or both ends either flared or soldered.

CONTROL VALVE

Part CV-1 — A lifetime tool designed to operate all Line Tap, Can Tap and Line Port Valves. Quick coupled — installed without wrenches. CV-2 Control Valve is used in same manner as CV-1. Double fitting enables you to connect a gauge and charging line in series to one or any number of packaged refrigerant containers.

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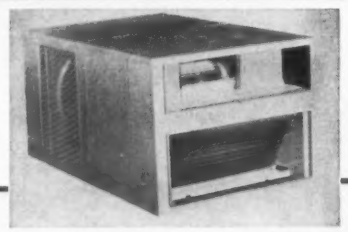

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SELF-CONTAINED
AIR CONDITIONER

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Know the inside of what you buy—Quiet cooling is profitable cooling—Underwriters approved for outdoor installation—The economical answer to your air conditioning needs.

HEAT CONTROLLER, Inc.
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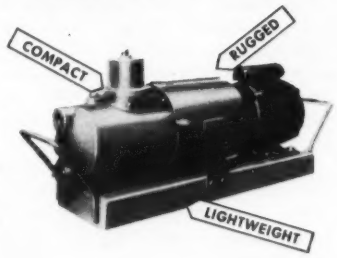
P.S. Our 2, 3, and 4 HP self-contained units are available with commercial fronts, too!

for DEHYDRATING and TESTING . . .

BEACH-RUSS
Portable
VACUUM PUMPS



Beach-Russ Portable Vacuum Pumps are designed *specifically* for dehydrating and testing refrigeration and air conditioning units. These high performance, quiet operating, portable pumps are available in two sizes:

- Model A Two-Stage Pump—1/10 mm. vacuum, blank flange, 2.5 cfm, ½ HP, weight 80 lbs.
- Model O Single-Stage Pump — 1 mm. vacuum, blank flange, 1 cfm, ⅙ HP, weight 48 lbs.

Beach-Russ Vacuum Pumps are also made in types and sizes for evacuation and testing of refrigeration equipment on a production basis.

BEACH-RUSS COMPANY
620C GRAYBAR BUILDING
NEW YORK 17, N. Y.

Send descriptive literature covering
☐ Model O Single-Stage Vacuum Pumps.
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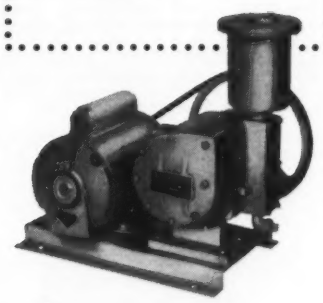
sociate members with equal opportunity to serve on the various commissions. The institute publishes a bulletin six times yearly summarizing world happenings in refrigeration and related fields.

Of particular importance to U. S. Industry is the institute's work in international standards, according to the announcement, which added: "Over the past year the work of the U. S. National Committee has been closely followed and supported by the American Society of Heating, Refrigerating & Air-Conditioning Engineers, the Air-Conditioning & Refrigeration Institute, and the Refrigeration Research Foundation."

Inquiry regarding the committee may be directed to the committee officers or to the committee, in care of National Academy of Sciences—National Research Council, 2101 Constitution Ave., Washington 25, D. C.

Now!
get the reliability
of complete
dehydration
with Stokes

Compound High Vacuum Pumps



Completely removing water vapors and other condensables before introducing refrigerants stops formation of corrosive acids that will cause operating trouble and damage to equipment. These new Stokes pumps were designed specifically to give you that extra protection. All this is accomplished at room temperatures; no heating, torching or bake-out. And look at their features! Rugged, reliable industrial construction, fast-pumping, lightweight, compact, portable, quiet . . . giving you *more performance per dollar than any comparable pump!* For full information, just print your name below and attach this ad to your letterhead.

(fill in name)

Vacuum Equipment Division
F. J. STOKES CORP.
5565 Tabor Road
Phila. 20, Pa.

STOKES

Hot Weather May Mean Sales Records--

(Concluded from Page 1, Col. 5)

compared to last, at around 40%.

Thus, if retail sales are keeping pace with the increase in factory shipments, the increase might be calculated in the general area of 30%.

However, it is conceded that there were some pretty good inventories in the field, and if these have really been moving out, then the increase could conceivably soar to 50%, and the hoped-for goals of 1,500,000 or more room air conditioners, and 200,000 or more central residential systems might be realized.

While reports from retailers were spotty, there were indications that units were moving from dealer floors. "I've had one dealer who has been moving two units a day for residential or light commercial work where last year he was lucky to sell two a week in the height of the season," states a Detroit distributor.

Some Outlets 2 Weeks Behind on Deliveries

Outlets like Marshall Field & Co., Chicago department store, were said to be two weeks' behind on delivery of some units because of unavailability and a Philadelphia distributor said he was buying back certain sizes of units from some outlets to supply others who had run out. In the lobby display at its Dayton plant Airtemp placed "sold" signs on display stands as it moved the display models to the field to fill orders. Airtemp also announced it was "sold out" of its recently announced new 2½-ton room unit.

The continually increasing demand for products from dealers has led officials of General Electric's Home Heating and Cooling Div. to believe that 1959 will see new records established for the sales of G-E residential air conditioning equipment.

So big is the order backlog, say company officials, that the Tyler, Texas plant is working a three-shift schedule, and even so is having difficulty in meeting the demand.

G-E also believes there are good indications that the demand will continue high throughout the summer and into the fall, and is planning some special promotional effort to push sales in the late summer and early fall.

Some parts of the South and West hadn't had as much hot weather as is usually experienced by this time, and the picture was not quite so good in those areas. And prices, generally firmer for room units, residential systems (in some areas), and applied systems, were still at too much of a "bargain" level in the commercial market.

Why a Sell-Out Year Is a Possibility

"This could be a sell-out year for manufacturers on room air conditioners — and possibly on other unitary equipment," stated R. E. Cassatt, sales manager for York's packaged products, and veteran air conditioning sales executive. Cassatt gave this analysis of why a "sell-out" might be a possibility:

"First, with respect to room units, there has been a healthy upswing in household appliance sales generally, with room air conditioners near the top.

"This has been backed up by favorable weather conditions in heavily populated areas plus the fact that the probability of a broader imposition of the excise tax has become known to the public, and this is influencing decisions for immediate buying.

"It now appears that a change in the tax may not be made until fall, which could mean that manufacturers and distributors may work to move all remaining inventory at the end of the summer into the field, which could mean a complete sell-out on room air conditioners by manufacturers.

"In residential and commercial unitary equipment there are many factors which could make this a year in which a sell-out might be realized.

"Surveys of both homeowners and businessmen show air conditioning to be high on the preference list for planned purchases. But lack of weather conditions to give a 'push' to such plans has held them back in the last couple of years.

"This year, however, the historic pattern for a successful air conditioning sales year is being followed in almost classic style. That pattern is an early hot spell in May, followed by a prolonged hot spell that starts early in June. This in the past has meant a continuing high volume of sales into August."

Some Firms Report More Units Sold Than In All '58

Some further evidence that there was a good movement of air conditioners at the retail level was the statment by L & P Electric, New York City distributor for Fedders, that by the end of the week of June 8 it would have sold more air conditioning thus far in 1959 than it did in all of 1958. The distributor was also predicting that the week of June 8 would set a new record high for any single week, surpassing the previous record week of June 17, 1957.

Fedders also announced that by the end of the same week a dozen of its distributors would have shipped more units to dealers thus far this year than in all of 1958.

In Detroit, where last summer a combination of a recession in the auto industry plus cool weather dealt the air conditioning business a healthy wallop, a real comeback was being noted. "Residential sales have picked up especially well for our dealers," says Carl Beltz of The Burton Co., a distributor.

"One rather small dealer, who has been using a consistent newspaper advertising program, has been averaging two sales a day for residential or small commercial applications. Most of the residential jobs are 3-ton and 5-ton systems, and apparently at least half of them are going to existing homes."

"This could be the first summer in some time when buyers might be disappointed from the standpoint of deliveries," says Gene Cuneo, sales manager for George Johnston Co., veteran Detroit distributor.

His sentiments were echoed by other distributors and dealers across the country. There is a feeling that many businessment and homeowners who have been "figuring on" air conditioning for several years, are now making firm commitments to buy. "And, of course, they want it delivered and installed tomorrow."

Combination of improved general business conditions together with some reasonably lengthy spells of hot weather have served to "reactivate" many bids for quotations that have been pigeon-holed for years, believes Brooks Reeder, of York-Detroit Corp. "The continuing hot weather is getting many buyers off the fence, and if it holds on for any extended period, there could be a real flood of retail business."

FROM THE LOBBY DISPLAY at Airtemp's headquarters in Dayton, George H. Childers, general manager, room air conditioners, and Hugh Dillon, product planner, remove a casement-window model room air conditioner, to help fill an emergency shipment to dealers. High demand for the industry's products is leading to predictions of a possible sell-out before the end of summer.

Small Shops Falling In Line This Year

In Chicago, a representative of Murphy & Miller, contractor who is a major factor in the commercial and industrial field, said that a pick-up in business was evident. One notable trend, he stated, was that some of the smaller taverns, barber shops, and beauty shops who had held out against air conditioning in the past were now swinging over to it.

Another encouraging factor, it was stated, is that more new industrial plants are either being air conditioned, or giving consideration to making provision for it for possible future installation.

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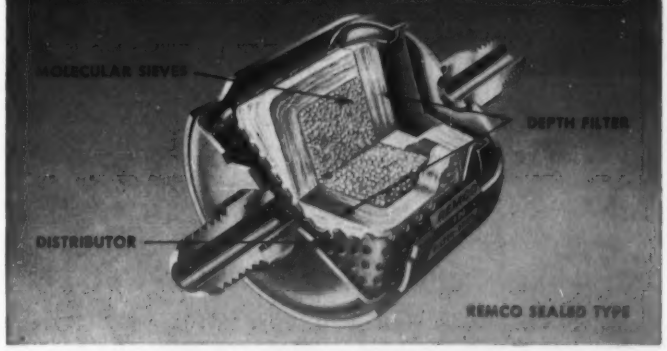
REMCO

MOLECULAR SIEVE FILTER-DRIERS IN

½ thru 40 tons



Only Remco offers so wide a selection of sizes and types

Fast-acting Molecular Sieves keep system moisture concentration to 10 ppm or lower even at 140°F, and hold acid to far below dangerous corrosion limits. Massive depth filter removes all scale, sludge and carbon as small as 10 microns. Remco Filter-Driers work equally well in the hot machine compartment or the refrigerated space. U/L Approved, working pressure is 500 psi; minimum bursting pressure, 2500 psi.

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Adapter Type with moisture-liquid-indicator adapter fitting

SEALED and REPLACEABLE CARTRIDGE TYPE Filter-Driers are available in ½ thru 40 tons, with ¼" thru 1⅝" flare or sweat connections.

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All Remco Molecular Sieve Filter-Driers and adapter fittings have full refrigerant flow. Ask for them at your local refrigeration wholesaler's, or write for Bulletin MS-1. Remco, Inc., Zelienople, Pa.

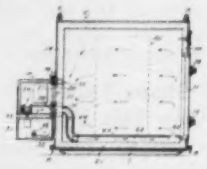
REMCO

REMCO ADVANCED REFRIGERATION COMPONENTS:
Filter-Driers · Liquid Indicators · Receiver-Driers · Check Valves · Safety Devices · Frost-Tite Flare Nuts

PATENTS

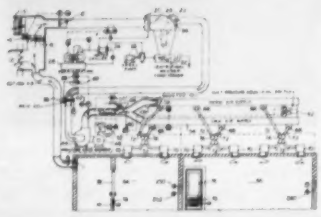
Week of Feb. 10 (Concluded)

2,872,792. REFRIGERATING MEANS. Sebastien S. Corhanidis, Athens, Greece.



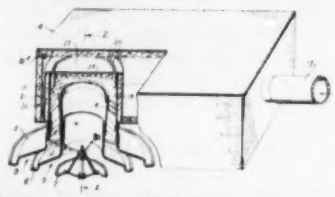
A portable refrigerator for use with a portable refrigeration unit, an insulated housing including an air inlet opening underlying an air outlet opening in one wall for respectively communicating with the air outlet and inlet openings of the portable refrigeration unit, an access door through a wall of the housing remote from said one wall, said housing including a bottom portion, a floor spaced above said bottom portion and extending from inner marginal portions of said above said bottom portion. . . .

2,872,858. METHOD AND APPARATUS FOR PRESSURIZED SUPPLY AND HIGH VELOCITY AIR CONTROL. William J. Caldwell, Independence, Mo., assignor to Townsend F. Beaman, Jackson, Mich.



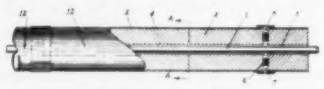
1. A method of pressurized supply high velocity air control comprising the steps of pressurizing conditioned air, distributing the pressurized air at velocities in the order of 5,000 to 12,000'/min., reducing the velocity of the air by a primary expansion to the order of 2,500'/min. at a point adjacent a zone of consumption, and conducting the air from the point of primary expansion and reduced velocity to a point of secondary expansion. . . .

2,872,859. AIR DISTRIBUTION UNIT. Walter W. Kennedy, Rockford, Ill., assignor to Barber-Colman Co., Rockford, Ill.



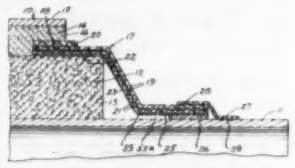
5. An air distribution unit comprising a tubular member, a tubular casing encircling said member and having an outlet end and an inlet end extending beyond one end of the member, the outer surface of said member and the inner surface of said casing converging toward said inlet end to define a passage having a reduced section at said one end of the member and increasing in cross sectional area toward said outlet end, means supporting said member in said casing, a wall axially spaced from said one end and covering the inlet end of said casing....

2,872,946. THERMAL INSULATION SYSTEM. Harry K. Stueber, Baltimore, Md.



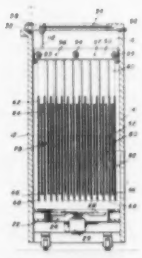
1. A preformed insulation unit for insulating a fluid carrying pipe, the inner contours of said unit generally conforming to the outer configuration of the pipe with which it is to be used, expandable means on said inner contours of said unit, being adapted to expand after assembly of said unit upon the pipe to fill any voids therebetween, and an outer sheath surrounding said unit to form a support therefor.

2,872,947. PROTECTIVE HOOD ENCLOSURES FOR ENDS OF THERMALLY INSULATED PIPE UNITS. Alexander H. Isenberg, Woodside, Calif.



3. In a thermally insulated conduit unit having an elongated tubular outer casing, and having within said casing a conveyor pipe enclosed within a layer of thermal insulating material which is in turn inclosed within a layer of moisture impervious material, the terminal ends of said conveyor pipe and respective layers being in stepped relation whereby the thermal insulation has an exposed end portion.

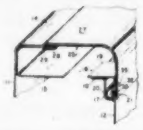
2,873,000. ELECTROSTATIC PRECIPITATOR. Lowell S. Elam, Boise, Idaho.



1. An electrostatic precipitator comprising a casing having an air inlet and an air outlet, electrically insulating side walls defining communicating ionizing and collection chambers in said casing and in registry with said inlet and outlet, a power pack which includes a transformer, and a voltage doubler circuit connected therewith, an ionizer unit which includes small diameter wires and larger diameter bars, strips to which said bars and wires are secured. . . .

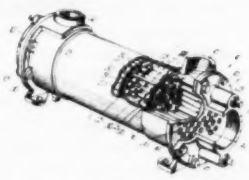
Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

2,873,041. BREAKER STRIP CONSTRUCTION. William A. Allen, Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y.



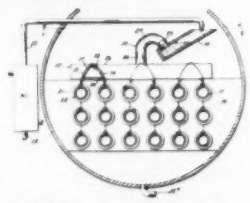
Refrigerated cabinet construction comprising an outer shell having top, rear and side walls and an open side, an inwardly extending flange formed on the front edge of said shell, a liner having top, side and rear walls mounted within said shell in spaced relation to the top, side and rear walls thereof, a flange extending outwardly from the forward edge of said liner, a step interposed between said flange and said liner wall. . . .

2,873,098. HEAT EXCHANGE APPARATUS. Jack L. Morgan, Beloit, Wis., assignor to Yates-American Machine Co., Beloit, Wis.



1. A heat exchange unit having an outer elongated shell provided with header plates having first fluid conduit means associated therewith, a plurality of tubes within said shell and extending longitudinally thereof with their ends sealed within apertures in said header plates, said tubes being in communication with said first conduit means, a plurality of spaced baffle plates of lightweight resilient metallic material mounted on said tubes within said shell. . . .

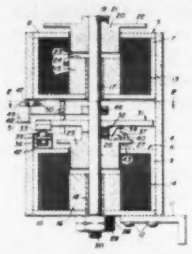
2,873,140. LIQUID DISTRIBUTION SYSTEM. Richard H. Merrick, East Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y.



A distribution system for liquids comprising dispersion means including a tube having at least one restricted discharge opening in an upper portion thereof, a supply pipe operatively connected to said dispersion means in substantially the same plane therewith, a liquid receiver above said dispersion means and having a pipe of inverted U form operatively connected at one end to a lower portion of said receiver and at the other end to said supply pipe, whereby when liquid is introduced to said receiver the same will flow, through said supply pipe and dispersion means by siphoning action.

2,873,412. ROTARY SOLENOID. Haraden Pratt, Springdale, Conn., assignor, by mesne assignments, to Bell & Gossett Co., Morton Grove, Ill.

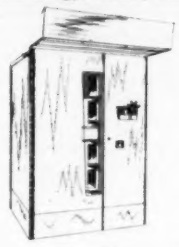
1. A rotary solenoid comprising a casing, a magnet coil having a core fixed within said casing, a shaft extending through said core and being longitudinally and angularly movable relative thereto, an armature fixed to said shaft, a flange on said armature positioned to engage said casing to positively limit longitudinal movement of said shaft in the power stroke direction of movement of said shaft, stop means fixed to said shaft and



positioned to engage said casing to positively limit longitudinal movement of said shaft in the return stroke direction thereof. . . .

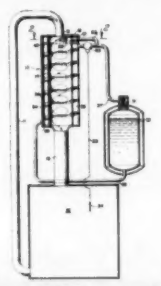
DESIGN

194,389. EGG VENDING MACHINE. Heinz Braunsberg, Bristol, Conn.



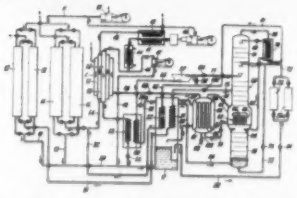
Week of Feb. 17

2,873,582. AIR CONDITIONING SYSTEM FOR SPACE SHIPS. Frederick H. Green, Palos Verdes Estates, Calif., assignor to The Garrett Corp., Los Angeles.



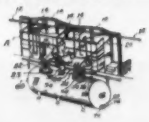
1. An air conditioning system for an enclosed space comprising: a source of liquid oxygen; a vortex tube having an inlet orifice, and suction and discharge openings; circulating means for conducting said liquid oxygen from said source over the outer surface of said vortex tube while maintaining said liquid oxygen in heat exchange relationship with said surface; conduit means connected to said circulating means and said inlet orifice and means for connecting said suction and discharge openings to said enclosure.

2,873,583. DUAL PRESSURE CYCLE FOR AIR SEPARATION. Lawrence D. Potts, Eggertsville, and Edward F. Yendall, Kenmore, N. Y., assignors to Union Carbide Corp., a corporation of New York.



1. In a process for the separation of a gas mixture by low temperature rectification in a multipressure cycle in which portions of the gas mixture are provided at a condensation pressure and at a high pressure, the steps comprising cooling the condensation pressure portion by heat exchange with a portion of the separation products to a temperature close to its condensation temperature; cooling one part of the high pressure portion by expansion with production of external work to about said condensation pressure; cooling the other part of the high pressure portion by a heat exchange including heat exchange with another portion of the separation products to a low temperature and expanding the thus cooled other part to about said condensation pressure. . . .

2,873,722. BULK MILK TANK AND WASHER THEREFOR. Leon L. Duncan, Lloyd P. Duncan, and George R. Duncan, Sr., Washington, Mo., assignors to Zero Mfg. Co., Washington, Mo.



1. A milking system comprising milk withdrawing means, a cylindrical, horizontal-axis, milk cooling tank,

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POSITIONS WANTED

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ATTENTION MANUFACTURERS: District manager: interested in genuine opportunity with manufacturer to cover the Philadelphia area. 36 yrs. old, nine years' experience in sales & application & heating. Experienced in contacting: architects, engineers, wholesalers, contractors. Proven sales record. BOX A6284, Air Conditioning, Heating & Refrigeration News.

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ATTENTION FIELD service engineers: Fedders Corporation has openings on the West Coast and the Middle West for district service managers. Must have experience in central heating and cooling service, installation and application. If interested write to: Sil Thompson, c/o FEDDERS CORPORATION, 58-30 Grand Avenue, Maspeth 78, New York.

PRODUCT DESIGN engineer with experience for commercial refrigerators, beverage coolers, reachins, display cases. Opportunity for person in such capacity now or capable assistant seeking advancement. Write President, HOWARD REFRIGERATOR CO., 4745 Worth Street, Phila. 24, Pa.

REFRIGERATION EXPERIENCE; person able to set up systems and test equipment for self contained commercial reach-ins, beverage coolers, display cases. Person selected will take charge of refrigeration department. Opportunity for person in such capacity now or capable assistant seeking advancement. Write attention President, HOWARD REFRIGERATOR CO., 4745 Worth Street, Phila. 24, Pa.

MANUFACTURER'S AGENT—Wanted. New central air conditioning residential unit for simple installation. Self contained, flexible ducts, complete. Packaged for average three bedroom home. Limited competition. Fast moving. Peak performance with economical operational costs. Many territories available. Write full details PARKE AIRE OF LOUISVILLE, 5534 National Turnpike, Louisville, Kentucky.

PUBLISHER'S REPRESENTATIVE — Sell R.A.C. Pricing Service to contractors and wholesalers. Experience in pricing of parts and supplies. Trade association experience helpful. Exclusive territories set up depending on your qualifications. Can be carried as side line. Base plus commission. Write RAC PRICE REPORTER, 2812 So. Robertson Blvd., Los Angeles, California.

ENGINEER REFRIGERATION Controls—To head a department on design and development of commercial refrigeration control valves of all types; national corporation with midwestern manufacturing and engineering facility; salary and bonus commensurate with work background and ability. Send full details, qualifications and personal data to BOX A6172, Air Conditioning, Heating & Refrigeration News.

REFRIGERATION ENGINEER wanted who is capable of designing small refrigeration systems for household refrigerators and freezers and commercial cabinets. We purchase compressors but the man we choose must be familiar with design of high-side assemblies and sizing of evaporators of plate or finned coil type. Should have experience with automatic defrost methods. Applicants should give complete resume of education, experience and salary requirements. Reply to BOX A6276, Air Conditioning, Heating & Refrigeration News.

QUALITY CONTROL engineer to have complete approval for shipment of all brass mill products. Must be competent to set up own department and will be answerable to President of company only. Starting salary dependent on qualifications. BOX A6285, Air Conditioning, Heating & Refrigeration News.

EQUIPMENT FOR SALE

SOMBREROS? NO. Now good thermostatic expansion valves made in Mexico. Half ton $8.75, ¾ and one ton $9.90. Agate needle for long life. Secret charge for all temperatures, no adjustment in the field needed. Very compact. Try this valve for utmost performance and satisfaction. Order from FRIGOTHERM MECANICA AGENTS, P. O. Box 1416, Laredo, Texas.

NEW PACKAGED water chillers — Prewired control panel with high-low, operating, freeze, and circulator relay controls, 230 volt, 60 cycle, 1 or 3 phase current. 1¾ hp. water cooled $162.00; 3 hp. water cooled $417.00; 2 hp. air cooled $246.00; 3 hp. air cooled $617.00; terms-cash, F.O.B. manufacturer. BOX A6234, Air Conditioning, Heating & Refrigeration News.

FOR SALE: 3—100 ton Westinghouse air conditioning compressors and condensers. Freon-12 used in this equipment. Available and intact all starting and control equipment, plus chill water tanks and coils. Equipment used on chilled water system and still intact. Type CLS-3400, style 1560477, hp. 100, make: Westinghouse, cap. 100 ton, volts 208-220. Call or write: R. P. SCHERER CORPORATION, 9425 Grinnell Avenue, Detroit 13, Michigan. Attention: Mr. W. Rand.

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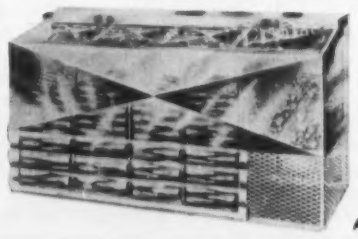
WANTED: HEATING and cooling accessories. We are interested in new fabricated metal products to manufacture and sell to manufacturers and wholesalers of furnaces and air conditioners. Bob Main, VIKING AIR PRODUCTS, 5601 Walworth Avenue, Cleveland 2, Ohio.

MISCELLANEOUS

ATTENTION REFRIGERATION Servicemen: Would you be interested in saving from 25 to 50% on many standard refrigeration and air conditioning parts and supplies? Send for our free circulars and catalogs. WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

"A CASE OF COOL JUDGMENT"



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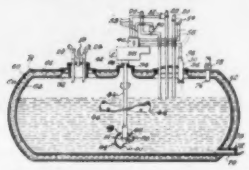
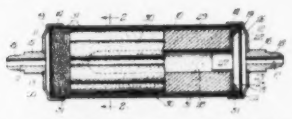
conduit means interconnecting said milk withdrawing means and said tank, said tank having a conduit line inspection opening in a top portion thereof, said opening having an upwardly extending peripheral flange, the upper portion of said flange lying in a curved surface which is substantially coaxial with that of said tank, whereby an observer from outside said tank can see substantially the entire interior of said tank.

2,873,823. VACUUM BULK MILK TANK WITH AGITATORS. Lloyd P. Duncan, Lean L. Duncan, and George R. Duncan, Sr., Washington, Mo., assignors to Zero Mfg. Co., Washington, Mo.



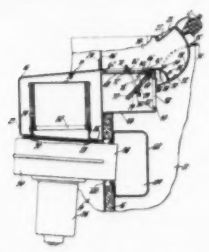
1. A milking system for milking a farm animal comprising a set of teat cups, a bulk milk cooler tank, a milk conduit interconnecting said teat cups with said cooler tank, a vacuum conduit operatively connected to said cooler tank, stirrer means in said cooler tank, variable speed power means operatively connected to said stirrer means, said stirrer means comprising a substantially vertically disposed shaft and propeller-type paddles on said shaft, whereby when said shaft is turned at slow speed, the milk will be agitated and when cleaning fluid is introduced to said tank and said shaft rotated at high speed, said milk tank will be cleaned.

2,873,856. REFRIGERANT DRIER. Evan Jones, Evanston, Ill., assignor to Henry Valve Co., Inc., Melrose Park, Ill.



1. A refrigerant drier comprising a sleeve-like casing having inlet and outlet closure members, a rigid porous dehydrant block of substantial relative length in said casing held at one end thereof in spaced relation to the inner surface of said casing means fixed relative to said casing, and discrete dehydrant material within said casing and substantially surrounding said block, said discrete dehydrant material positioning and supporting the remainder of said block particularly the other end thereof within said casing in spaced relation to the inner surface of said casing.

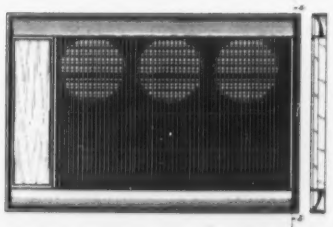
2,873,953. AIR HEATING AND COOLING APPARATUS FOR VEHICLES. Maurice A. Thorne, Detroit, Mich., assignor to General Motors Corp., Detroit, Mich.



An air heating and cooling system for an automotive body having a windshield, an engine compartment, and a fire wall forward of said windshield with said windshield and fire wall partially defining the forward end of a passenger compartment, inlet duct means incorporated in said body and leading forwardly from an outside air inlet located forward of the base of said windshield for admitting an outside air stream, blister structure in said engine compartment on the forward side of said fire wall, a distributor housing located at the rear of said fire wall and beneath said inlet duct means, an evaporator core and a heater core mounted in said housing in substantially parallel relation with said fire wall. . . .

DESIGN

194,465. AIR CONDITIONER FRONT PANEL. Carl W. Sandberg, Bloomfield Hills, Mich., assignor to Whirlpool Corp., a corporation of Delaware.



Servicing Automobile Air Conditioners

(Vol. 4 — 1959 Models)

BY C. DALE MERICLE

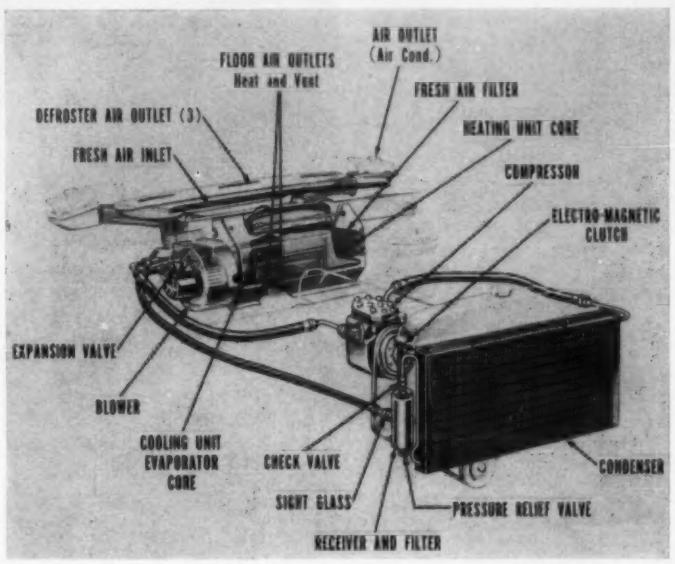


FIG. 1 shows layout of major components in American Motors "All Season" air conditioning system.

AMERICAN MOTORS

American Motors Corp.
14250 Plymouth Rd.
Detroit 32, Mich.

"All Season Air Conditioning System" offered as a factory-installed optional accessory on American Motors 1959 cars is virtually identical with the 1958 models, at least insofar as service procedures are concerned.

The built-in system employs the same blower and air distribution system for cooling, heating, and windshield defrosting.

Compressor is mounted on the car engine and driven through a magnetic clutch, condenser is located in front of the radiator, and the evaporator-heater assembly is mounted on the firewall. (See Fig. 1.)

Refrigerant-12 is employed in American Motors systems. Complete charge is 3 lbs. Six cc. of methanol are also used in these conditioners.

Compressor

A two-cylinder reciprocating compressor is used by American Motors. Discharge service valve mounted on the left side of the compressor is a three-position valve. Suction service valve on right side of compressor is a "Schrader" type valve. With this type valve the charge cannot be held in the system to allow service on the compressor.

The compressor is driven through a magnetic clutch which is cycled by a non-adjustable thermostat.

Oil charge in the compressor is 10 oz.

Condenser

Condenser is located in front of the car radiator.

On the right side of the condenser is the combination receiver tank and filter.

A check valve is provided at the inlet on top of the receiver.

There is a sight glass at the receiver outlet.

Evaporator

Evaporator assembly, mounted on the firewall, includes the evaporator coil, heating core, blower, thermostatic expansion valve, and automatic thermostat which cycles the magnetic clutch.

Expansion valve is of the external equalizer type. Superheat setting of the valve cannot be adjusted in the field.

Air is discharged into the passenger compartment through adjustable outlets on the dashboard. Approximately 30% outside air is admitted to the system through a cowl air intake.

Controls

Four control knobs and levers (Fig. 2) mounted on the dash to the left of the steering column are employed in the "All Season" system to regulate cooling, heating, ventilating, and windshield defrosting.

To obtain cooling the controls are positioned as follows:

(1) "Defrost" knob is pushed all the way in to close windshield defrosting damper;

(2) "Vent" lever is pushed all the way up to closed position, which shuts off all but about 30% of outside air from cowl intake;

(3) "Heat" lever is pushed all the way down to off position;

(4) "Fan" knob is pushed all the way in and rotated counterclockwise to either high and low speed blower position. This cuts in the circuit to the magnetic clutch, operation of which is cycled by a thermostat mounted in the evaporator assembly. (Turning the "Fan" knob clockwise also gives high and low speed blower operation but only for heating.)

Wiring diagram for the air conditioning control circuit is shown in Fig. 3.

Thermostat controlling magnetic clutch operation is preset to cut in at 46.5° F. as sensed by the capillary in the evaporator core and to cut out when the temperature drops to 41.5° F.

Chief control of amount of cooling effect, therefore, is obtained by regulating blower speed and adjusting air outlets on the instrument panel.

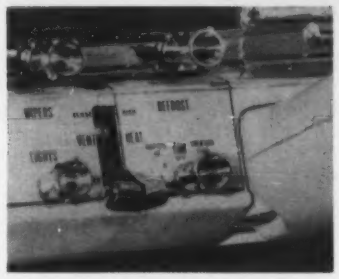


FIG. 2—Controls for cooling and heating are on instrument panel to left of steering column.

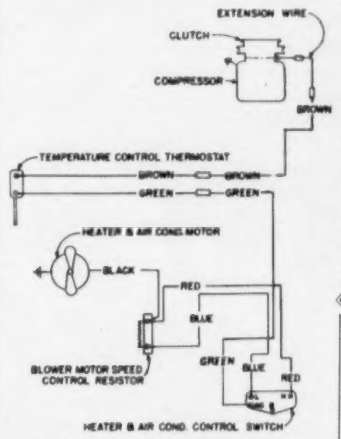


FIG. 3—Wiring diagram of American Motors 1958-59 system.

SERVICE HINTS

Evacuating System

As with any automobile air conditioner, the American Motors system must be evacuated prior to charging every time it is opened for repairs or if it has been standing for some time without a charge.

Although a separate vacuum pump can be used for evacuation, the manufacturer's official instructions call for using the compressor itself to evacuate the system.

If methanol has not been added already to the refrigerant drum in the amount of 2 cc. per pound, then 6 cc. of methanol should be placed in the compressor crankcase through the oil filler plug prior to evacuation. The methanol can also be added by pouring into the center gauge line prior to charging.

According to the manufacturer, a vacuum of 12 to 18 in. or more should be obtained and held for several minutes before admitting some Refrigerant-12 for leak testing. Following leak testing, the system is again evacuated before charging.

Charging System

Full charge of the 1959 (and 1958) American Motors system is 3 lbs. of Refrigerant-12 plus 6 cc. of methanol.

The manufacturer advises that charging can be done either with liquid refrigerant or refrigerant vapor.

Liquid refrigerant is charged into the high side through the discharge service valve. The compressor is **not** running.

Refrigerant in the vapor stage can be charged into the low side with the compressor running to help pump in the gas.

Operating Temperatures

Generally speaking, operating an American Motors system with the car engine at idle speed in an ambient temperature of 75° to 90° F. with all the windows closed should result in a 42° F. temperature at the air outlets if the system is functioning normally.

The higher ambient temperature, however, the higher the discharge air outlet temperature is apt to be. The same would apply to the head pressure.

Service Hints

Because the refrigeration system of the American Motors air conditioner is essentially the conventional type which has a thermostat cycling a magnetic clutch, there should be no unusual service problems.

Improper functioning of the various damper and heater controls, however, could interfere with operation of an otherwise normal cooling unit.

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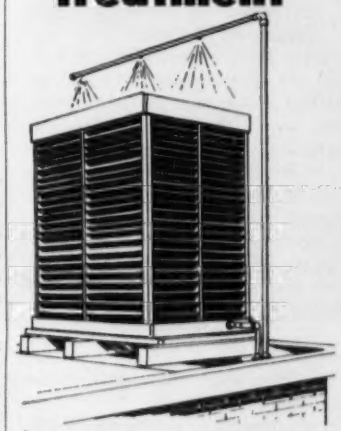

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NAPC Meeting--

(Concluded from Page 1, Col. 5)

get first attention, he said.

The new president said he would also recommend an expanding information program in the labor area, aimed at increasing the amount of statistical, legislative, and contract data available to contractors at the state and local level.

More than 7,000 contractors attending the convention heard a union leader assail the U. S. Office of Education for denying training funds to journeymen and apprentices in the construction trades, a defense of the NLRB's "Brown-Olds remedy," and advice on surety bonds, and where to get money.

Peter T. Schoemann, general president of the United Association of Plumbers & Pipefitters (AFL-CIO), attacked the allocating of Federal funds to the training of so-called "technicians" in defense work, while denying them to journeymen and apprentices in the construction trades.

Effect of Federal Policy

The effect is that the Office of Education is providing high school level education for technicians, Schoemann said, duplicating UA's related instruction and permitting the students to take two years to complete it rather than the five years demanded of plumbing and pipefitting apprentices.

Both the technicians and the apprentices may be competing for the same jobs, Schoemann fears.

To correct this situation, he suggests:

1. Securing National Defense Education Act funds for related instruction for journeymen and apprentices.
2. Making sure these funds are available for vocational training in the construction industry.
3. Conducting a long range campaign to educate the Office of Education that the word "technician" has no place in plant or on the construction job unless it refers to specialized jobs such as a draftsman or laboratory assistant.

Controversial NLRB Decisions Defended

Jerome D. Fenton, former general counsel of the National Labor Relations Board, defended the controversial Brown-Olds and Mountain Pacific decisions affecting hiring practices in the construction industry.

He predicted that the "Brown-Olds remedy," holding both employer and union financially responsible for violation of hiring procedures under the Taft-Hartley Act, "will be applied wherever practices illegal under the Act remain as before."

Fenton described the Mountain Pacific decision as a landmark among NLRB's decisions concerning the construction industry. The decision dealt with exclusive union hiring halls and referral systems.

Not until this decision, Fenton said, had the Board dealt with the problem of a union's having completely unrestricted control over the tenure of employes.

William R. Phillips, president of the National Association of Surety Bond Producers, declared "the construction industry is peculiar in that you contractors name a price for your services before you know what your costs are going to be."

Phillips explained that while banks lend credit, surety companies guarantee it. Whereas insurance can be cancelled at any time, a surety bond binds a company to the end of the contract.

Bond producers can, he said, assist contractors with banking connections; personnel; and contacts with engineers, architects, and awarding bodies. They study clients' contracts to prevent undesirable obligations and to advise proper insurance coverage.

Pointing to the increasing number of contractor failures, Phillips noted that failures are not restricted to young, inexperienced, or improperly financed contractors. Even well-qualified, well financed contractors have failed in business.

"It's obvious that work has been bid too cheaply," Phillips said, "but is this the only reason for failures? Was there improper supervision, or did the contractor operate on too little liquid resources?

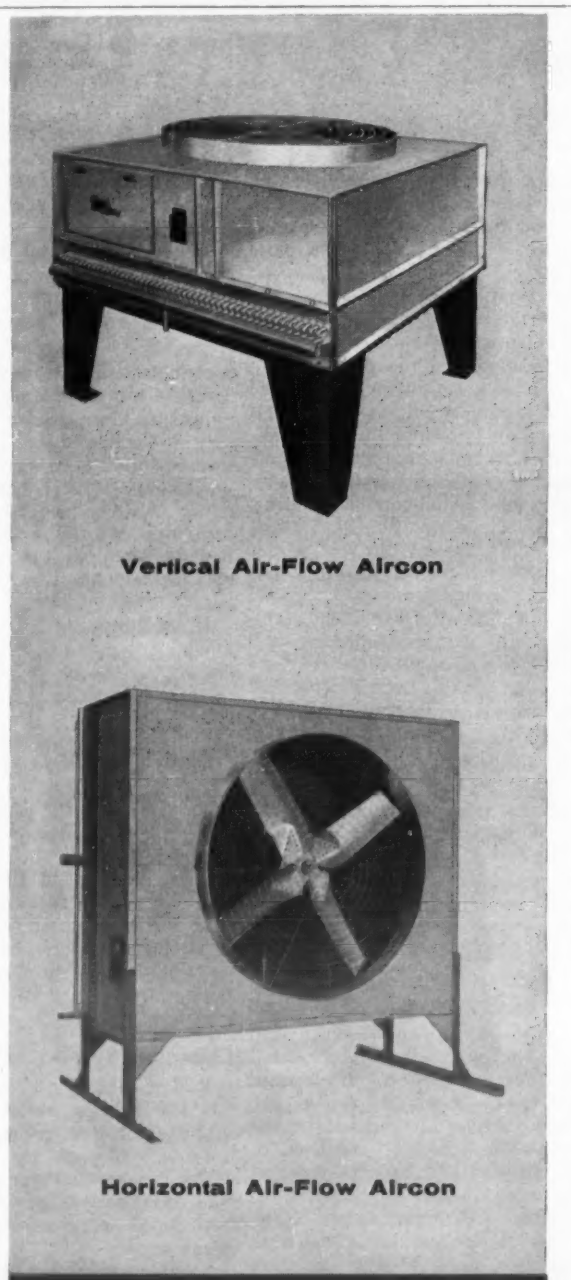
"Did he over-invest in his needs for equipment? Did he divert liquid assets into secondary assets or did he become largely an office operator and leave the field supervision to others?

"Apparently a combination of these factors has been operating in the construction industry and resulting in contractor failure," Phillips concluded.

A plumbing contractor's working capital, in relation to the uncompleted work he has on hand, should be enough to finance the total volume of work to be done, Phillips suggested, as well as to meet emergencies caused by stoppages over which he has no control.

Among such situations, Phillips pointed out, were those caused by incompetent general contractors whose slow progress on jobs tied up capital and manpower, resulting in unexpected cost increases.

NEWLY-ELECTED officers of the National Association of Plumbing Contractors who will assume their duties July 1 are, from left, Irvin L. Rechkemmer, Canton, Ohio, president; Carl N. Finley, New Orleans, first vice president; G. Allen Briggs, Oak Park, Mich., second vice president; J. H. Soehnlen, Louisville, Ohio, secretary; and John M. Rhoades, Sarasota, Fla., treasurer.



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